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0 Loc. 5165

TAPE #2. SIDE A  
FILE 8

IDENTIFICATION  
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PRODUCT CODE!	MAINDEC-8E-DBAC-D
-----	
PRODUCT NAME!	DKSE CLOCKS DIAGNOSTIC
-----	
DATE CREATED!	OCTOBER 8, 1971
-----	
MAINTAINER!	DIAGNOSTIC PROGRAMMING GROUP
-----	
AUTHOR!	JOHN VROBEL
-----	

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# 1: TRACT

THE DK8E CLOCKS DIAGNOSTIC IS DESIGNED TO VERIFY CORRECT OPERATION OF THE DK8-EA, DK8-EC, DK8-ES, AND DK8-EP REAL TIME CLOCK OPTIONS. THE PROGRAM UTILIZES AND TESTS IOT'S ASSOCIATED WITH THE DK8-EA LINE, DK8-EC CRYSTAL, AND THE DK8-EP/DK8-ES PROGRAMMABLE REAL TIME CLOCKS.

## 2: REQUIREMENTS

### 2.1 EQUIPMENT

A PDP-8E WITH THE DK8-EA, DK8-EC, DK8-ES, OR THE DK8-EP OPTION INSTALLED AND AN ASR-33 TELETYPE OR EQUIVALENT.

A SPECIAL TEST CABLE IS NECESSARY TO CONNECT THE CLOCK FRONT PANEL TO THE PDP-8/E POWER SUPPLY FOR THE DK8-ES CLOCK OPTION.

A SPECIAL CABLE IS NECESSARY TO CONNECT THE DK8-EA CLOCK MODULE TO THE PDP-8/E POWER SUPPLY FOR THE DK8-EA CLOCK OPTION.

### 2.2 STORAGE

THE PROGRAM OCCUPIES LOCATIONS 0000-6600.

### 2.3 PRELIMINARY PROGRAMS

ALL PROGRAMS FOR THE BASIC PDP-8E MUST HAVE BEEN RUN SUCCESSFULLY.

### 3: LOADING PROCEDURE

#### 3.1 METHOD

THE PROGRAM IS LOADED INTO BANK 0, USING THE STANDARD BINARY LOADER TECHNIQUE.

### 4: STARTING PROCEDURE

#### 4.1 CONTROL SWITCH SETTINGS

SWR0=1 FOR DK8-EP/DK8-ES REGISTER TEST  
 SWR1=1 FOR DK8-ES SCHMITT TRIGGER LOGIC TEST  
 SWR2=1 FOR INHIBIT ERROR PRINT OUT  
 SWR3=1 FOR INHIBIT ERROR BELL  
 SWR4=1 FOR INHIBIT ERROR HALT  
 SWR5=1 FOR ENTER SCOPE LOOP ON ERROR  
 SWR6=1 FOR LOOP ON NON-FAILING TEST  
 SWR7=1 FOR DK8-EP/DK8-ES EXTERNAL PULSE SCOPE LOOP TEST



SWR8=1 FOR DK8=ES EXTERNAL CLOCK SCOPE LOOP TEST

4:1:1 FREQUENCY SWITCH SETTINGS FOR DK8=EA/DK8=EC TEST  
-----

SWR9=1120 TEST 1 CPS CRYSTAL CLOCK  
SWR9=1121 TEST 50 CPS CRYSTAL CLOCK  
SWR9=1122 TEST 50 CPS LINE CLOCK  
SWR9=1123 TEST 60 CPS LINE CLOCK  
SWR9=1124 TEST 500 CPS CRYSTAL CLOCK  
SWR9=1125 TEST 5000 CPS CRYSTAL CLOCK

4:2 STARTING ADDRESS  
-----

THE STARTING ADDRESS IS 0200 OCTAL;

4:3 OPERATOR ACTION  
-----

4:3:1 DK8=EA/DK8=EC TEST  
-----

WITH THE PROGRAM IN BANK 0, SET SWITCH REGISTER TO 0200.

PRESS ADDRESS LOAD;

SET THE SWITCH REGISTER TO 0000.

SET SWITCH REGISTER TO INDICATE FREQUENCY OF DK8=EA  
OR DK8=EC CLOCK UNDER TEST;

PRESS CLEAR AND THEN PRESS CONTINUE.

THE PROGRAM SHOULD RUN UNTIL AN ERROR OCCURES OR UNTIL  
STOPPED BY THE OPERATOR.

THE TTY WILL SIGNAL "DK8E PASS COMPLETE" AT  
THE COMPLETION OF EVERY PASS.

4:3:2 DK8=EP/DK8=ES REGISTER TEST  
-----

WITH THE PROGRAM IN BANK 0, SET SWITCH REGISTER TO 0200.

PRESS ADDRESS LOAD;

SET SWITCH REGISTER TO 0000.

SET SWITCH REGISTER TO INDICATE DK8=EP/DK8=ES REGISTER TEST.

PRESS CLEAR AND THEN PRESS CONTINUE.

THE PROGRAM SHOULD RUN UNTIL AN ERROR OCCURES OR UNTIL  
STOPPED BY THE OPERATOR.

THE TTY WILL SIGNAL "DK8E PASS COMPLETE" AT  
THE COMPLETION OF EVERY PASS.



4:3:3

-----  
ES SCHMITT TRIGGER INPUT LOGIC TEST  
-----

WITH THE PROGRAM IN BANK 0, SET THE SWITCH REGISTER TO 0200.

PRESS ADDRESS LOAD;

SET SWITCH REGISTER TO 0000.

SET THE SWITCH REGISTER TO INDICATE DK8-ES SCHMITT TRIGGER  
INPUT LOGIC TEST.

PRESS CLEAR AND THEN CONTINUE.

THE PROGRAM SHOULD RUN UNTIL AN ERROR OCCURES OR UNTIL  
STOPPED BY THE OPERATOR.

THE TTY WILL SIGNAL "DK8E PASS COMPLETE" AT  
THE COMPLETION OF EVERY PASS.

-----  
DK8-EP/DK8-ES EXTERNAL PULSE SCOPE LOOP TEST  
-----

4:3:4

WITH THE PROGRAM IN MEMORY, SET THE SWITCH REGISTER TO 0200.

PRESS ADDRESS LOAD;

SET SWITCH REGISTER TO 0000.

SET SWITCH REGISTER TO INDICATE EXTERNAL PULSE SCOPE LOOP TEST.

PRESS CLEAR AND THEN PRESS CONTINUE.

USE OSCILLOSCOPE TO VERIFY 40 MICRO SECOND PULSE RATE AT  
FJ2, FJ1, HM1, AND HM2 ON THE DK8-EP/DK8-ES MODULES.

USE OSCILLOSCOPE TO VERIFY 40 MICRO SECOND PULSE RATE AT  
OVERFLOW ON DK8-ES CLOCK FRONT PANEL. (DK8-ES ONLY)

-----  
DK8-ES EXTERNAL CLOCK SCOPE LOOP TEST  
-----

4:3:5

WITH THE PROGRAM IN MEMORY, SET THE SWITCH REGISTER TO 0200.

PRESS ADDRESS LOAD;

SET SWITCH REGISTER TO 0000.

SET SWITCH REGISTER TO INDICATE EXTERNAL CLOCK SCOPE LOOP TEST.

PRESS CLEAR AND THEN PRESS CONTINUE.

GROUND CLOCK IN ON DK8-ES CLOCK FRONT PANEL.

THE TTY BELL WILL SIGNAL, IF AN EXTERNAL CLOCK IN WAS  
RECEIVED.

-----  
OPERATING PROCEDURE  
-----

5:



5.1 OPERATIONAL SWITCH SETTINGS  
-----

NONE

5.2 SUBROUTINE ABSTRACTS  
-----

NONE

5.3 OPERATOR TEST SELECTION  
-----

5.3.1 DK8=EA OR DK8=EC CLOCK OPTION  
-----

INSTALL DK8=EA OR DK8=EC CLOCK OPTION

RUN DK8=EA/DK8=EC TEST 4.3.1.

5.3.2 DK8=EP CLOCK OPTION  
-----

INSTALL DK8=EP CLOCK OPTION,

RUN DK8=EP/DK8=ES REGISTER TEST 4.3.2.

RUN DK8=EP/DK8=ES EXTERNAL PULSE SCOPE LOOP TEST 4.3.4.

5.3.3 DK8=ES CLOCK OPTION  
-----

INSTALL DK8=ES CLOCK OPTION,

RUN DK8=EP/DK8=ES REGISTER TEST 4.3.2.

CONNECT EXTERNAL SOURCE FREQUENCY LOCATED AT J5 ON THE PDP8/E  
POWER SUPPLY TO THE EXTERNAL SCHMITT TRIGGER INPUT LOGIC VIA  
THE DK8=ES CLOCK FRONT PANEL WITH THE SPECIAL TEST CABLE.

SET THE THREE SLOPE SELECTION SWITCHES ON DK8=ES CLOCK  
FRONT PANEL TO THE POSITIVE POSITION.

ADJUST THE THREE INPUT THRESHOLD POTENTIOMETERS ON  
DK8=ES CLOCK FRONT PANEL TO THE CENTER POSITION.

RUN THE DK8=ES SCHMITT TRIGGER INPUT LOGIC TEST 4.3.3.

RUN THE DK8=EP/DK8=ES EXTERNAL PULSE SCOPE LOOP TEST 4.3.4.

RUN THE DK8=ES EXTERNAL CLOCK SCOPE LOOP TEST 4.3.5.

6. ERRORS  
-----

ALL RECOVERABLE ERRORS ENCOUNTERED IN THE PROGRAM WILL  
RESULT IN AN ERROR HALT OR AN ERROR TYPEOUT AND THEN  
AN ERROR HALT.

Valid for  
this machine.



# 6:1 ERRORS AND DISRUPTION

## 6:1.1 ERROR HALTS

ERROR HALTS IN PROGRAM ARE AS FOLLOWS:

EHLT11 MONITOR ERROR HALT, READ ERROR TYPE OUT.

EHLT21 SKIP TRAP, CLZE

EHLT31 SKIP TRAP, CLOE

EHLT41 SKIP TRAP, CLOE

EHLT51 SKIP TRAP, CLAB

EHLT61 SKIP TRAP, CLEN

EHLT71 SKIP TRAP, CLSA

EHLT81 SKIP TRAP, CLBA

EHLT111 SKIP TRAP, CLCA

## 6:1.2 ERROR TYPEOUTS

ERROR TYPEOUTS IN PROGRAM ARE AS FOLLOWS:

TEST XXXX FAILED, STARTING ADDRESS XXXX

THE GOOD AC = XXXX AND BAD AC = XXXX

CLOCK BUFFER REGISTER AND AC TRANSFER FAILED

CLOCK COUNTER REGISTER AND AC TRANSFER FAILED

CLOCK ENABLE REGISTER AND AC TRANSFER FAILED

THE AC WAS CHANGED BY A CLOCK JOT

PROGRAM INTERRUPT FAILED, NO INTERRUPT EXPECTED

PROGRAM INTERRUPT FAILED, INTERRUPT EXPECTED

CLOCK SKIP FAILED, NO SKIP EXPECTED

CLOCK SKIP FAILED, SKIP EXPECTED

CLOCK OUTPUT FAILED, CLOCK FREQUENCY FAST

CLOCK OUTPUT FAILED, CLOCK FREQUENCY SLOW

## 6:2 ERROR RECOVERY

ALL ERRORS ENCOUNTERED MUST BE CORRECTED BEFORE PROCEEDING ON IN THE PROGRAM. IN ALL CASES, ACCESS TO THE PROGRAM IS RESTORED.

FURTHER INFORMATION,

6:2:1 SCOPE LOOPS  
-----

A SCOPE LOOP IS AVAILABLE FOR ALL MONITOR ERROR HALTS;  
THE OPERATOR MAY ENTER A SCOPE LOOP AFTER A MONITOR  
ERROR HALT BY DOING THE FOLLOWING.

SET SWR4=1 TO INDICATE INHIBIT ERROR HALT.

SET SWR5=1 TO INDICATE ENTER SCOPE LOOP.

SET SWR6=1 TO INDICATE LOOP ON THIS TEST.

PRESS CLEAR AND THEN PRESS CONTINUE.

SET SWR2=1 TO INHIBIT ERROR TYPEOUT.

SET SWR3=1 TO INHIBIT ERROR BELL.

7: RESTRICTIONS  
-----

7:1 STARTING RESTRICTIONS  
-----

NONE

7:2 OPERATING RESTRICTIONS  
-----

THE PROGRAM MUST RESIDE IN BANK 0:

PD=0E WITH THE DK8=EA, DK8=EC, DK8=ES, OR THE DK8=EP  
CLOCK OPTION INSTALLED;

THE EXT. GPS SOURCE USED IN THE DK8=ES EXTERNAL SCHMITT  
TRIGGER INPUT LOGIC TEST MUST BE DISCONNECTED WHEN  
RUNNING THE DK8=EP/DK8=ES REGISTER TEST.

THE PD=0E MUST BE RUNNING FAST CYCLE "1.2" MICRO. SECONDS;

ALL CLOCK OUTPUTS SHOULD BE VERIFIED WITH AN OSCILLOSCOPE  
TO INSURE CORRECT OPERATION.

8: SPECIFICATIONS  
-----

8:1

THE DK8=EA CLOCK COUNTS AT INTERVALS OF TIME AT 100 OR  
120 TIMES A SECOND; THE FREQUENCY IS DETERMINED BY THE  
FULL WAVE RECTIFIER NETWORK WHICH OPERATES OFF THE  
50 OR 60 CPS LINE WHICH EVER IT MAY BE; THIS MAKES THE  
CLOCK CAPABLE OF SUPPLYING PROGRAM INTERRUPT REQUESTS  
AT A RATE OF 100 OR 120 TIMES A SECOND.

8:2 EXTENSION TIME



\*\*\*\*\*

OK8-EA/OK8-EC TEST, APPROXIMATIVELY 2.5 MINUTES PER PASS.  
 OK8-EP/OK8-ES REGISTER TEST, APPROXIMATIVELY 3.5 MINUTES  
 PER PASS.

OK8-ES SCHMITT TRIGGER INPUT LOGIC TEST, APPROXIMATIVELY  
 2 MINUTES PER PASS.

9. PROGRAM DISCRIPTION  
 \*\*\*\*\*

9.1 OK8-EA OR OK8-EC CLOCK  
 \*\*\*\*\*

THE PROGRAM EXERCISES AND TESTS THE FOLLOWING IOT'S FOR CORRECT  
 OPERATION AND FUNCTION.

SKIP ON A CLOCK FLAG AND CLEAR THE FLAG (CLSK)  
 OCTAL CODE 6133 SENSES THE CLOCK FLAG WHICH IS SET WITH  
 OPERATION 6131 EACH CLOCK PULSE. IF IT IS SET, THE NEXT  
 SEQUENTIAL INSTRUCTION IS SKIPPED AND THE  
 FLAG IS THEN CLEARED.

ENABLE CLOCK INTERRUPT (CLEI)  
 OCTAL CODE 6131 ENABLES THE CLOCK FLAG, WHICH IS SET WITH  
 OPERATION 6131 EACH CLOCK PULSE, TO CAUSE A PROGRAM  
 INTERRUPT REQUEST. THE FLAG WILL REMAIN  
 SET UNTIL CLEARED WITH CLSK.

DISABLE CLOCK INTERRUPT (CLED)  
 OCTAL CODE 6132 DISABLES THE CLOCK FLAG FROM CAUSING  
 OPERATION 6131 AN INTERRUPT REQUEST. THE FLAG IS NOT AFFECTED.

9.2 OK8-EP/OK8-ES CLOCK  
 \*\*\*\*\*

THE PROGRAM EXERCISES AND TESTS THE FOLLOWING IOT'S FOR CORRECT  
 OPERATION AND FUNCTION.

CLEAR THE CLOCK ENABLE REGISTER PER AC (CLZE)  
 OCTAL CODE 6130 CLEARS THE BITS IN THE CLOCK ENABLE  
 OPERATION 6130 REGISTER CORRESPONDING TO THOSE BITS  
 SET IN THE AC. THE AC IS NOT AFFECTED.

SKIP ON A CLOCK INTERRUPT (CLSK)  
 OCTAL CODE 6131 SENSES FOR INTERRUPT CONDITIONS, IF THE  
 OPERATION 6131 CONDITIONS ARE PRESENT, THE NEXT SEQUENTIAL  
 INSTRUCTION IS SKIPPED. THE CONDITIONS  
 ARE AS FOLLOWS:  
 A. ENABLE EVENT INTERRUPT 1 AND INPUT 4  
 B. ENABLE EVENT INTERRUPT 2 AND INPUT 2  
 C. ENABLE EVENT INTERRUPT 3 AND INPUT 1  
 D. ENABLE OVERFLOW INTERRUPT AND OVERFLOW



# AC TO CLOCK ENABLE REGISTER (CLOE)

6132

CAUSES THE CONTENTS OF THE AC TO BE LOADED INTO THE CLOCK ENABLE REGISTER CORRESPONDING TO THOSE BITS SET IN THE AC. THE AC IS NOT AFFECTED. CLOCK ENABLE REGISTER FUNCTIONS ARE AS FOLLOWS.

AC BIT  
-----

FUNCTION  
-----

0

ENABLE CLOCK OVERFLOW

1 & 2

MODE CONTROL

00 COUNTER RUNS AT SELECTED RATE. OVERFLOW OCCURS EVERY 4096 COUNTS. OVERFLOW REMAINS SET UNTIL CLEARED BY (CLSA) IOT 6135.

01 COUNTER RUNS AT SELECTED RATE. OVERFLOW CAUSES THE CLOCK BUFFER REGISTER TO BE TRANSFERRED TO THE CLOCK COUNTER REGISTER WHICH WILL CONTINUE TO RUN AFTER TRANSFER. OVERFLOW WILL REMAIN SET UNTIL CLEARED BY (CLSA) IOT 6135.

10 COUNTER RUNS AT SELECTED RATE. AN EXTERNAL SCHMITT TRIGGER SIGNAL, IF ENABLED, CAUSES THE CLOCK COUNTER REGISTER TO BE TRANSFERRED TO THE CLOCK BUFFER REGISTER AND THE CLOCK COUNTER CONTINUES TO RUN.

11 COUNTER RUNS AT SELECTED RATE. AN EXTERNAL SCHMITT TRIGGER SIGNAL, IF ENABLED, CAUSES THE CLOCK COUNTER REGISTER TO BE TRANSFERRED TO THE CLOCK BUFFER REGISTER AND THE CLOCK COUNTER WILL CONTINUE TO RUN FROM 0.

3,4 85

COUNT RATE

000 STOP

001 EXTERNAL CLOCK SOURCE

010 100 CPS

011 1000 CPS

100 10000 CPS

101 100000 CPS

110 1000000 CPS

111 STOP

WHEN SET TO A 1, OVERFLOW CAUSES AN EXTERNAL PULSE.



WHEN SET TO A 1, THE CLOCK COUNTER IS INHIBITED FROM COUNTING.

WHEN SET TO A 1, ENABLES EXTERNAL SCHMITT TRIGGER SIGNALS AND THE OVERFLOW FLOP TO CAUSE AN INTERRUPT REQUEST IF THEY ARE ENABLED.

ENABLE SCHMITT TRIGGER EVENTS

100 INPUT 4  
010 INPUT 2  
001 INPUT 1

AC TO CLOCK BUFFER REGISTER (CLAB)

6133  
CAUSES THE CONTENTS OF THE AC TO BE TRANSFERRED INTO THE CLOCK BUFFER REGISTER; THE CONTENTS OF BUFFER REGISTER IS THEN TRANSFERRED TO THE CLOCK COUNTER REGISTER, THE AC IS NOT AFFECTED.

CLOCK ENABLE REGISTER TO AC (CLEN)

6134  
CAUSES THE CONTENTS OF THE CLOCK ENABLE REGISTER TO BE TRANSFERRED TO THE AC. THE ENABLE REGISTER IS NOT AFFECTED.

CLOCK STATUS TO AC (CLSA)

6135  
CAUSES THE CONTENTS OF THE CLOCK STATUS REGISTER TO BE TRANSFERRED INTO THE AC. THE STATUS BITS ARE THEN CLEARED CORRESPONDING TO THOSE BITS THAT WERE SET IN THE AC. THE STATUS REGISTER FUNCTIONS ARE AS FOLLOWS.

AC BIT

STATUS CONDITION

OVERFLOW

NOT USED

INPUT 4

INPUT 2

INPUT 1

CLOCK BUFFER REGISTER TO AC (CLBA)

6136  
CAUSES THE CONTENTS OF THE CLOCK BUFFER REGISTER TO BE TRANSFERRED INTO THE AC. THE BUFFER REGISTER IS NOT AFFECTED.

CLOCK COUNTER REGISTER TO AC (CLCA)

6137

OPERATION I

10:

LISTING  
--5--55

CAUSES THE CONTENTS OF THE CLOCK  
COUNTER TO BE TRANSFERRED INTO THE  
CLOCK BUFFER REGISTER. THE BUFFER  
REGISTER IS THEN TRANSFERRED INTO  
THE AC. THE COUNTER REGISTER  
IS NOT AFFECTED.



✓DKBE CLOCKS DIAGNOSTIC

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/ THE STARTING ADDRESS 0200 OCTAL.

/PLEASE READ DOCUMENT FOR FURTHER INFORMATION.

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[illegible]

K0207,	0000
K0007,	0000
AU010,	0207
SAVAC,	0000
K7700,	0000
K0100,	7700
K4000,	0100
K0200,	4000
K2525,	0200
K5252,	2525
X10TA,	5252
X10TB,	10TA
X10TC,	10TB
X10TD,	10TC
X10TE,	10TD
X10TF,	10TE
X10TF1,	10TF
X10TG,	10TF1
X10TH,	10TG
X10TI,	10TH
X10TJ,	10TI
X10TK,	10TJ
X10TS,	10TK
X10TS1,	10TS
X10TS2,	10TS1
X10TS3,	10TS2
REGA,	10TS3
REGB,	0000
REGC,	0000
REGD,	0000
REGE,	0000
REGF,	0000
SKPNAT,	XWALT
XPIG01,	PIG01
XPIG02,	PIG02
XPIG03,	PIG03
XPIG04,	PIG04
XPIG05,	PIG05

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0054 5310 XISZ, JSZLOP
0055 5224 RANDY, RANDOM
0056 5216 XSNDRV, SNDRV
0057 5302 XSYNC, SYNC
0060 5065 XCLREG, CLREG
0061 0215 OVER2, BGNEAC +2
0062 0217 XDK8EP, TST30
0063 0570 XMITT, TST202
0064 3561 XMITT1, TST202 -3
0065 3556 XLAS, SHLAS
0066 5660 XGTAD, GTAD
0067 5746 SEND, 0000
0070 0000 RECEV, 0000
0071 0000 NERROR, NERROR
0072 5000 ERROR, ERRO
0073 5020 XCLOCK, CLOCK
0074 5413 CLOCKS, 0000
0075 0000 KREGC, 0000
0076 0000 LOOP, 0000
0077 0000 JMP12, JMP 1 2
0100 5402 XCRUF, CRUF
0101 5441 XREG, PREG
0102 5563 XSORT, SORT
0103 5491 XOCTEL, OCTEL
0104 5420 XMESS, MESS
0105 5542 XPRINT, PRINT
0106 5604 XTYPE, TYPE
0107 5056 XBELL, BELL
0110 5046 KPRMT1, 7730
0111 7730 K7400, 7400
0112 7400 K7100, 0000
0113 0000 K6007, 6007
0114 6007 K0006, 0006
0115 0006 K0400, 0400
0116 0400 K6000, 6000
0117 6000 K3000, 3000
0120 3000 K5000, 5000
0121 5000 K7770, 7770
0122 7770 K0260, 0260
0123 0260 K4100, 4100
0124 4100 K3740, 3740
0125 3740 K0240, 0240
0126 0240 K0017, 0017
0127 0017 K7774, 7774
0130 7774 K7773, 7773
0131 7773 K7772, 7772
0132 7772 K0077, 0077
0133 0077 K0215, 0215
0134 0215 K0212, 0212
0135 0212 K0377, 0377
0136 0377 K0040, 0040
0137 0040 K0020, 0020
0140 0020 K7000, 7000
0141 7000 K0010, 0010
0142 0010
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2143 2000  
 2144 1000  
 2145 0300  
 2146 0500  
 2147 0600  
 2150 0700  
 2151 2725  
 2152 2650  
 2153 7425  
 2154 7350  
 2155 7753  
 2156 0225  
 2157 0150  
 2160 1450  
 2161 1425  
 2162 6575  
 2163 6525  
 2164 5600  
 2165 5450  
 2166 0070  
 2167 5771  
 2170 5740  
 2171 1775  
 2172 2200  
 2173 2603  
 2174 2565  
 2175 4003

0200

0200 7300  
 0201 6007  
 0202 4501  
 0203 4506  
 0204 6000  
 0205 4501  
 0206 4460  
 0207 4564  
 0210 4466  
 0211 5465  
 0212 5463  
 0213 4474  
 0214 4565  
 0215 4567  
 0216 3077  
 0217 4460  
 0220 3040

0221 1040  
 0222 3070  
 0223 1070  
 0224 4420

BEGIN,  
 CLA CLL  
 6007  
 JMS I XCRLE  
 JMS I XPRINT  
 DKMS  
 JMS I XCRLE  
 JMS I XCLREG  
 JMS I XSETO  
 JMS I XLAS  
 JMP I XMITT1  
 JMP I XOK8EP  
 JMS I XCLOCKS  
 JMS I XOPR  
 BGNEAC,  
 JMS I XGETH  
 DCA LOUP  
 JMS I XCLREG  
 DCA REGA  
 /DOES IOT CLEI CHANGE AC ?  
 /CHECK ALL COMBINATIONS  
 /  
 TST0,  
 TAD REGA  
 DCA SEND  
 TAD SEND  
 JMS I XIOTA  
 /GET AC NUMBER  
 /SAVE OUTPUT FOR ERROR PRINTER  
 /IOT 6131, CLEI  
 /CLEAR THE AC AND LINK  
 /CAF OR CLEAR THE WORLD  
 /CRLF  
 /PRINT DK8E CLOCKS DIAGNOSTIC  
 /MESSAGE POINTER  
 /CRLF  
 /CLEAR ALL MY REGISTERS  
 /SET UP FOR PI RETURN  
 /GET HIS SWITCHES  
 /TEST SCHMITT  
 /TEST DK8EP CLOCK  
 /TEST DK8EA OR DK8EC  
 /SORT AND PRINT FREQ, SELECTED  
 /GET TIME LENGTH  
 /SET LOOP COUNTER  
 /CLEAR ALL REGISTERS



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0225	3071	DCA RECEV	/SAVE INPUT FOR ERROR PRINTER
0226	1071	TAD RECEV	
0227	4456	JMS I XSNDV	/CHECK SEND AND RECEV REGISTERS
0230	4472	JMS I NERRR	/CHECK NON-ERROR HANDLER.
0231	4473	JMS I ERROR	/ERROR! CLEI CHANGED AC.
0232	3000	3000	/TST0 ERROR MESSAGE.
0233	0221	TST0	/SCOPE LOOP.
0234	3040	DCA REGA	

  

/DOES IOT CLED CHANGE AC ?				
/CHECK ALL COMBINATIONS				
0235	1040	TST1,	/GET AC NUMBER	
0236	3070	DCA SEND	/SAVE OUTPUT FOR ERROR PRINTER	
0237	1070	TAD SEND		
0240	4421	JMS I X1070	/IOT 6132, CLED	
0241	3071	DCA RECEV	/SAVE INPUT FOR ERROR PRINTER	
0242	1071	TAD RECEV		
0243	4456	JMS I XSNDV	/CHECK SEND AND RECEV REGISTERS	
0244	4472	JMS I NERRR	/CHECK NON-ERROR HANDLER.	
0245	4473	JMS I ERROR	/ERROR! CLED CHANGED AC.	
0246	3001	3001	/TST1 ERROR MESSAGE.	
0247	0235	TST1	/SCOPE LOOP.	
0250	3040	DCA REGA		

  

/DOES IOT CLSK CHANGE AC ?				
/CHECK ALL COMBINATIONS				
0251	1040	TST2,	/GET AC NUMBER	
0252	3070	DCA SEND	/SAVE OUTPUT FOR ERROR PRINTER	
0253	1070	TAD SEND		
0254	4422	JMS I X1070	/IOT 6133, CLSK	
0255	7000	NOP	/WAIT JUST IN CASE !	
0256	3071	DCA RECEV	/SAVE INPUT FOR ERROR PRINTER	
0257	1071	TAD RECEV		
0260	4456	JMS I XSNDV	/CHECK SEND AND RECEV REGISTERS	
0261	4472	JMS I NERRR	/CHECK NON-ERROR HANDLER.	
0262	4473	JMS I ERROR	/ERROR! CLSK CHANGED AC.	
0263	3002	3002	/TST2 ERROR MESSAGE.	
0264	0251	TST2	/SCOPE LOOP.	

  

/TEST FOR NO INTERRUPT ROST.				
0265	6007	TST3,	/CAF OR CLEAR THE WORLD	
0266	4447	JMS I X1060	/GO TO FINDING PI EXPECTED	
0267	4472	JMS I NERRR	/CHECK NON-ERROR HANDLER	
0270	4473	JMS I ERROR	/ERROR! PI OR INT, ROST, FAILED	
0271	1003	1003	/TST3 ERROR MESSAGE	
0272	0265	TST3	/SCOPE LOOP	

  

/DOES CLSK SKIP ON A CLOCK FLAG				
/TEST4,				
0273	1113	TAD KTICPS	/SET UP TIMER	
0274	3045	DCA REGA	/IOT 6133, CLSK	
0275	4422	JMS I X1070		

*5114 AC → clock reg*



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0276	7000	NOP			/IOT 6133, CLSK
0277	4422	JMS I XIOTC			/GO WAIT FOR FLAG
0300	4446	JMS I SKPWAT			/CHECK NON-ERROR HANDLER
0301	4472	JMS I NERROR			/ERROR1 CLSK OR FLAG FAILED
0302	4473	JMS I ERROR			/TST4 ERROR MESSAGE
0303	0404	0404			/SCOPE LOOP
0304	0273	TST4			
/DOES CLSK CLEAR THE FLAG ?					
0305	1113	TAD KTICPS			/SET UP TIMER
0306	3045	DCA RESF			/IOT 6133, CLSK
0307	4422	JMS I XIOTC			
0310	7000	NOP			/IOT 6133, CLSK
0311	4422	JMS I XIOTC			/GO WAIT FOR FLAG
0312	4446	JMS I SKPWAT			/GO THE FLAG
0313	7410	SKP I			/GO BACK TO TEST 4
0314	5704	JMP I			/IOT 6133, CLSK
0315	4422	JMS I XIOTC			/CHECK NON-ERROR HANDLER
0316	4472	JMS I NERROR			/ERROR1 CLSK CLEAR THE FLAG FAILED
0317	4473	JMS I ERROR			/TST5 ERROR MESSAGE
0320	0005	0005			/SCOPE LOOP
0321	0305	TST5			
/DOES CLEI ENABLE CLOCK INTERRUPT ?					
0322	4420	JMS I XIOTA			/IOT 6131, CLEI
0323	4450	JMS I XPIG02			/GO TO PI, PI EXPECTED
0324	4472	JMS I NERROR			/CHECK NON-ERROR HANDLER
0325	4473	JMS I ERROR			/ERROR1 DID CLEI ENABLE CLOCK INTERRUPT ?
0326	1406	1406			/TST6 ERROR MESSAGE
0327	0322	TST6			/SCOPE LOOP
/DOES CLED DISABLE CLOCK INTERRUPT ?					
0330	4420	JMS I XIOTA			/IOT 6131, CLEI
0331	4421	JMS I XIOTB			/IOT 6132, CLED
0332	4447	JMS I XPIG01			/GO TO PI, NO PI EXPECTED
0333	4472	JMS I NERROR			/CHECK NON-ERROR HANDLER
0334	4473	JMS I ERROR			/ERROR1 DID CLED DISABLE CLOCK INTERRUPT ?
0335	1007	1007			/TST7 ERROR MESSAGE
0336	0330	TST7			/SCOPE LOOP
/DOES CAF DISABLE CLOCK INTERRUPT ?					
0337	4420	JMS I XIOTA			/IOT 6131, CLEI
0340	6007	6007			/CAF OR CLEAR THE WORLD
0341	4447	JMS I XPIG01			/GO TO PI, NO PI EXPECTED
0342	4472	JMS I NERROR			/CHECK NON-ERROR HANDLER
0343	4473	JMS I ERROR			/ERROR1 DID CAF DISABLE CLOCK INTERRUPT ?
0344	1010	1010			/TST10 ERROR MESSAGE
0345	0337	TST10			/SCOPE LOOP
/DOES CLEI ENABLE CLOCK INTERRUPT ?					

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0346	4420	TST11,	JMS I XIOTY	/IOT 6131, CLEI
0347	4447		JMS I XPIG01	/GO TO PI, PI EXPECTED
0350	5354		JMP T11A	
0351	4420		JMS I XIOTY	/IOT 6131, CLEI
0352	4450		JMS I XPIG02	/GO TO PI, PI EXPECTED
0353	4472		JMS I NERROR	/CHECK NON=ERROR HANDLER.
0354	4473	T11A,	JMS I ERROR	/ERROR! CLEI AND CLED FAST TOGGLE
0355	1411		1411	/TS11 ERROR MESSAGE
0356	0346		TST11	/SCOPE.
			/DOES CLED DISABLE CLOCK INTERRUPT ?	
			/TST12,	
0357	4420		JMS I XIOTY	/IOT 6131, CLEI
0360	4421		JMS I XIOTB	/IOT 6132, CLED
0361	4450		JMS I XPIG02	/GO TO PI, NO PI EXPECTED
0362	5366		JMP T12A	
0363	4421		JMS I XIOTB	/IOT 6132, CLED
0364	4447		JMS I XPIG01	/GO TO PI, NO PI EXPECTED
0365	4472		JMS I NERROR	/CHECK NON=ERROR HANDLER.
0366	4473	T12A,	JMS I ERROR	/ERROR! CLEI AND CLED FAST TOGGLE
0367	1012		1012	/TS12 ERROR MESSAGE
0370	0357		TST12	/SCOPE LOOP.
			/TEST DECODER FOR 6135, NOT CLEI	
			/TST13,	
0371	4421		JMS I XIOTB	/IOT 6132, CLED
0372	4431		JMS I XIOTY	/IOT 6135, NOT AN IOT 6131
0373	4447		JMS I XPIG01	/GO TO PI, NO PI EXPECTED
0374	4472		JMS I NERROR	/CHECK NON=ERROR HANDLER.
0375	4473		JMS I ERROR	/ERROR! DID DECODER WORK
0376	1013		1013	/TS13 ERROR MESSAGE
0377	0371		TST13	/SCOPE LOOP.
			/TEST DECODER FOR A 6136, NOT CLED	
			/TST14,	
0400	4420		JMS I XIOTY	/IOT 6131, CLEI
0401	4432		JMS I XIOTJ	/IOT 6136, NOT AN IOT 6132.
0402	4450		JMS I XPIG02	/GO TO PI, PI EXPECTED
0403	4472		JMS I NERROR	/CHECK NON=ERROR HANDLER.
0404	4473		JMS I ERROR	/ERROR! DID DECODER WORK
0405	1414		1414	/TS14 ERROR MESSAGE
0406	0430		TST14	/SCOPE LOOP.
			/TEST DECODER FOR 6137, NOT CLSK	
			/TST15,	
0407	1113		TAD KTICPS	
0410	3045		OCA REGP	/SET UP TIMER
0411	4422		JMS I XIOTC	/IOT 6132, CLED
0412	7000		NOP	
0413	4433		JMS I XIOTK	/IOT 6137, NOT AN IOT 6133
0414	4446		JMS I SKPWAT	/GO WAIT FOR FLAG
0415	7410		SKP	/ERROR, SKIP OCCURRED
0416	4472		JMS I NERROR	/CHECK NON=ERROR HANDLER.
0417	4473		JMS I ERROR	/ERROR! DID DECODER WORK
0420	0015		0015	/TS15 ERROR MESSAGE



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0421	0407	TST15		/SCOPE LOOP.
		/DOES CLSK ENABLE CLOCK INTERRUPT ?		
0422	4422	TST16,	JMS I X10TC	/IOT 6133, CLSK
0423	7000	NOP		
0424	4447	JMS I XPIG01		/GO TO PI, NO PI EXPECTED
0425	4472	JMS I NERR0R		/CHECK NON-ERROR HANDLER.
0426	4473	JMS I ERR0R		/ERROR! DID CLSK CAUSE INTERRUPT
0427	1016	1016		/TST16 ERROR MESSAGE
0430	0422	TST16		/SCOPE LOOP.
		/DOES CLSK DISABLE CLOCK INTERRUPT ?		
0431	4420	TST17,	JMS I X10TA	/IOT 6131, CLEI
0432	4422	JMS I X10TC		/IOT 6133, CLSK
0433	7000	NOP		
0434	4450	JMS I XPIG02		/GO TO PI, PI EXPECTED
0435	4472	JMS I NERR0R		/CHECK NON-ERROR HANDLER.
0436	4473	JMS I ERR0R		/ERROR! CLSK DISABLED CLOCK INTERRUPT
0437	1417	1417		/TST17 ERROR MESSAGE
0440	0431	TST17		/SCOPE LOOP.
		/DOES CLEI CAUSE A SKIP ON FLAG ?		
0441	1113	TST20,	TAD KTICPS	/SET UP TIMER
0442	3045	DCA REGF		/IOT 6131, CLEI
0443	4420	JMS I X10TA		/GO WAIT FOR FLAG
0444	4446	JMS I SKPWAT		/ERROR, SKIP OCCURRED
0445	7410	SKP		/CHECK NON-ERROR HANDLER.
0446	4472	JMS I NERR0R		/ERROR! DID CLEI CAUSE A SKIP
0447	4473	JMS I ERR0R		/TST20 ERROR MESSAGE
0450	0020	0020		/SCOPE LOOP.
0451	0441	TST20		
		/DOES CLED CAUSE A SKIP ON FLAG ?		
0452	1113	TST21,	TAD KTICPS	/SET UP TIMER
0453	3045	DCA REGF		/IOT 6132, CLED
0454	4421	JMS I X10TB		/GO WAIT FOR FLAG
0455	4446	JMS I SKPWAT		/ERROR, SKIP OCCURRED
0456	7410	SKP		/CHECK NON-ERROR HANDLER.
0457	4472	JMS I NERR0R		/ERROR! DID CLED CAUSE A SKIP ON FLAG
0460	4473	JMS I ERR0R		/TST21 ERROR MESSAGE
0461	0021	0021		/SCOPE LOOP.
0462	0452	TST21		
		/DOES INT, ROST STAY DOWN ?		
0463	4457	TST22,	JMS I XSYNO	/SYNC WITH CLOCK
0464	4420	JMS I X10TA		/IOT 6131, CLEI
0465	4447	JMS I XPIG01		/GO TO PI, PI EXPECTED
0466	5273	JMP T22A		/ERROR, PI FAILED
0467	2041	ISZ REGB		
0470	5267	JMP I01		/WAIT 15.5 MS



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2471	4452	JMS I XPIG04		/GO TO PI, PI EXPECTED
2472	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
2473	4473	JMS I ERROR		/ERROR DID ROST, LAST ?
2474	1422	1422		/TST21 ERROR MESSAGE
2475	0463	TST22		/SCOPE LOOP
				/DOES CLSK CLEAR ROST, LINE ?
2476	4420	TST23,		/TST 6131, CLEI
2477	4457	JMS I XIOTA		/SYNC WITH CLOCK FLAG
2500	4451	JMS I XSYNC		/GO TO PI, NO PI EXPECTED
2501	4472	JMS I XPIG03		/CHECK NON-ERROR HANDLER
2502	4473	JMS I NERROR		/ERROR DID CLSK CLEAR ROST, FLAG
2503	1023	1023		/TST23 ERROR MESSAGE
2504	0476	TST23		/SCOPE LOOP
				/SYNC WITH CLOCK AND
				/CHECK FOR FAST OUTPUT
2505	4467	TST24,		/GET TIME CONSTANTS
2506	0000	JMS I XGTA0		/MODIFIED BY TEST
2507	1706	0000		
2510	3043	TAD I ,=1		
2511	4420	DCA REGD		
2512	4457	JMS I XIOTA		/TST 6131, CLEI
2513	4447	JMS I XSYNC		/SYNC WITH CLOCK
2514	4472	JMS I XPIG01		/GO TO PI, NO PI EXPECTED
2515	4473	JMS I NERROR		/CHECK NON-ERROR HANDLER
2516	2024	JMS I ERROR		/ERROR! CLOCK FREQUENCY FAST
2517	0505	2024		/TST24 ERROR MESSAGE
		TST24		/SCOPE LOOP
				/SYNC WITH CLOCK AND
				/CHECK FOR SLOW OUTPUT
2520	1115	TST25,		/SETUP FOR SLOW CLOCK
2521	4467	JMS I XGTA0		/GET TIME CONSTANTS
2522	0000	0000		/MODIFIED BY TEST
2523	1722	TAD I ,=1		
2524	3043	DCA REGD		
2525	4420	JMS I XIOTA		/TST 6131, CLEI
2526	4457	JMS I XSYNC		/SYNC WITH CLOCK
2527	4450	JMS I XPIG02		/GO TO PI, PI EXPECTED
2530	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
2531	4473	JMS I ERROR		/ERROR! CLOCK FREQUENCY SLOW
2532	2425	2425		/TST25 ERROR MESSAGE
2533	0520	TST25		/SCOPE LOOP
				/CHECK FOR FAST CLOCK AND
				/BAD CLOCK FLAG WITH CLSK,
2534	4467	TST26,		/GET TIME CONSTANTS
2535	0000	JMS I XGTA0		/MODIFIED BY TEST
2536	1735	0000		
2537	3043	TAD I ,=1		
2540	4457	DCA REGD		
		JMS I XSYNC		/SYNC WITH CLOCK



0541 4454  
0542 4422  
0543 4472  
0544 4473  
0545 2026  
0546 0534

JMS I XISZ  
JMS I XIOTC  
JMS I NERRR  
JMS I ERROR  
2026  
TST26  
/CHECK FOR SLOW CLOCK AND  
/BAD CLOCK FLAG WITH CLSK  
/SET UP FOR SLOW CLOCK  
/GET TIME CONSTANTS  
/MODIFIED BY TEST  
/SYNC WITH CLOCK  
/WAIT  
/IOT 6133, CLSK  
/ERROR, SKIP OCCURRED  
/CHECK NON-ERROR HANDLER  
/ERROR! CLSK OR CLOCK FLAG FAILED  
/TST27 ERROR MESSAGE  
/SCOPE LOOP

0547 1115  
0550 4467  
0551 0000  
0552 1751  
0553 3043  
0554 4457  
0555 4454  
0556 4422  
0557 7410  
0560 4472  
0561 4473  
0562 2427  
0563 0547  
0564 2077  
0565 5462  
0566 4590  
0567 5461

TST27,  
TAD K0006  
JMS I XGTAD  
0000  
TAD I 101  
DCA REGD  
JMS I XSYNC  
JMS I XISZ  
JMS I XIOTC  
SKP I NERRR  
JMS I ERROR  
JMS I ERROR  
2427  
TST27  
ISE LOOP  
JMP I OVER2A  
JMS I XPASS  
JMP I OVER2  
/DOES IOT CLZE CHANGE AC?  
/CHECK ALL COMBINATIONS.  
/TST30,  
TAD REGA  
JMS I XIOTC  
DCA RECEV  
TAD RECEV  
JMS I XSNDRV  
JMS I NERRR  
JMS I ERROR  
3030  
TST30  
/GET AC NUMBER  
/IOT 6130, CLZE  
/SAVE INPUT FOR ERROR PRINTER  
/CHECK SEND AND RECEV REGISTERS  
/CHECK NON-ERROR HANDLER  
/ERROR! CLZE CHANGED AC  
/TST30 ERROR MESSAGE  
/SCOPE LOOP  
/LOOP ON TEST  
/TYPE PASS COMPLETE  
/RESET COUNTER AND CONTINUE TESTING

0570 1040  
0571 4423  
0572 3071  
0573 1071  
0574 4456  
0575 4472  
0576 4473  
0577 3030  
0600 0570

/TST31,  
TAD REGA  
JMS I XIOTC  
DCA RECEV  
TAD RECEV  
JMS I XSNDRV  
JMS I NERRR  
JMS I ERROR  
3030  
TST30  
/GET AC NUMBER  
/IOT 6130, CLZE  
/SAVE INPUT FOR ERROR PRINTER  
/CHECK SEND AND RECEV REGISTERS  
/CHECK NON-ERROR HANDLER  
/ERROR! CLZE CHANGED AC  
/TST30 ERROR MESSAGE  
/SCOPE LOOP

0601 1040  
0602 3070  
0603 1070  
0604 4424  
0605 7000  
0606 3071  
0607 1071  
0610 4456  
0611 4472  
0612 4473

TST31,  
TAD REGA  
DCA SEND  
TAD SEND  
JMS I XIOTE  
NOP  
DCA RECEV  
TAD RECEV  
JMS I XSNDRV  
JMS I NERRR  
JMS I ERROR  
/DOES IOT CLSK CHANGE AC?  
/CHECK ALL COMBINATIONS  
/TST31,  
TAD REGA  
DCA SEND  
TAD SEND  
JMS I XIOTE  
NOP  
DCA RECEV  
TAD RECEV  
JMS I XSNDRV  
JMS I NERRR  
JMS I ERROR  
/GET AC NUMBER  
/SAVE OUTPUT FOR ERROR PRINTER  
/IOT 6131, CLSK  
/SAVE INPUT FOR ERROR PRINTER  
/CHECK SEND AND RECEV REGISTERS  
/CHECK NON-ERROR HANDLER  
/ERROR! CLSK CHANGED AC



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/
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0613 3031 /TST31 ERROR MESSAGE
0614 0601 /SCOPE LOOP

/DOES IOT CLOE CHANGE AC?
/CHECK ALL COMBINATIONS
/
TST32, TAD REGA /GET AC NUMBER
JMS I X10TF /IOT 6132, CLOE
DCA RECEV /SAVE INPUT FOR ERROR PRINTER
TAD RECEV /CHECK SEND AND RECEV REGISTERS
JMS I XSNDRV /CHECK NON-ERROR HANDLER
JMS I NERROR /ERRORICLDE CHANGED AC
JMS I ERROR /TST32 ERROR MESSAGE
3032 /SCOPE LOOP
TST32

/DOES IOT CLAB CHANGE AC?
/CHECK ALL COMBINATIONS
/
TST33, TAD REGA /GET AC NUMBER
JMS I X10TG /IOT 6133, CLAB
DCA RECEV /SAVE INPUT FOR ERROR PRINTER
TAD RECEV /CHECK SEND AND RECEV REGISTERS
JMS I XSNDRV /CHECK NON-ERROR HANDLER
JMS I NERROR /ERRORICLAB CHANGED AC
JMS I ERROR /TST33 ERROR MESSAGE
3033 /SCOPE LOOP
TST33

/DOES CAF CLEAR BUFFER REGISTER?
/CHECK FOR JAM TO AC, CLBA,
/
TST34, 6007 /CAF OR CLEAR THE WORLD
CLA CLL CMA /AC TO 7777
JMS I X10TJ /IOT 6136, CLBA
SNA CLA /WAS BUFFER ALL 0/1?
JMS I NERROR /CHECK NON-ERROR HANDLER
JMS I ERROR /ERRORICAF OR CLBA FAILED.
3434 /TST34 ERROR MESSAGE
TST34 /SCOPE LOOP

/DOES CAF CLEAR ENABLE REGISTER?
/CHECK FOR JAM TO AC, CLEN,
/
TST35, 6007 /CAF OR CLEAR THE WORLD
CLA CLL CMA /AC TO 7777
JMS I X10TH /IOT 6134, CLEN
SNA CLA /WAS ENABLE REGISTER ALL 0/1?
JMS I NERROR /CHECK NON-ERROR HANDLER
JMS I ERROR /ERRORICAL OR CLEN FAILED.
4435 /TST35 ERROR MESSAGE
TST35 /SCOPE LOOP
0647 6007
0650 7340
0651 4430
0652 7650
0653 4472
0654 4473
0655 4435
0656 0647

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0657 6007
0660 7340
0661 4431
0662 7690
0663 4472
0664 4473
0665 5036
0666 0657

/DOES CAF CLEAR STATUS REGISTER ?
/CHECK JAM TO AC CLSA
/
TST36, 6007
CLA CLL CHA
JMS I XIOTI
SNA CLA
JMS I NERROR
JMS I ERROR
5036
TST36
/CAF OR THE CLEAR THE WORLD
/AC TO 7777
/10T 6135, CLSA
/1AS STATUS REGISTER ALL 0'S ?
/CHECK NON-ERROR HANDLER
/CAF OR CLSA FAILED
/1TST36 ERROR MESSAGE
/SCOPE LOOP

```

```

/DOES AC LOAD BUFFER REGISTER ?
/CHECK ALL 0'S TRANSFER
/CHECK JAM TO AC, CLBA
/
TST37,
JMS I XIOTG
CLA CLL CHA
JMS I XIOTJ
SNA CLA
JMS I NERROR
JMS I ERROR
3437
TST37
/10T 6133, CLAB
/AC TO 7777
/10T 6136, CLBA
/1AS BUFFER ALL 0'S ?
/CHECK NON-ERROR HANDLER
/ERRORICLAB OR CLBA FAILED
/1TST37 ERROR MESSAGE
/SCOPE LOOP

```

```

/DOES AC LOAD BUFFER REGISTER ?
/CHECK ALL 1'S TRANSFER
/CHECK JAM TO AC, CLBA
/
TST40,
CLA CLL CHA
JMS I XIOTG
CLA CLL
JMS I XIOTJ
CMA CLA
SNA CLA
JMS I NERROR
JMS I ERROR
3440
TST40
/AC TO 7777
/10T 6133, CLAB
/1CLEAR THE AC AND LINK
/10T 6136, CLBA
/1COMPLEMENT THE AC
/1AS BUFFER ALL 1'S ?
/CHECK NON-ERROR HANDLER
/ERRORICLAB OR CLBA FAILED
/1TST40 ERROR MESSAGE
/SCOPE LOOP

```

```

/DOES BUFFER SURVIVE PATTERN 2525 ?
/
TST41,
TAD K2525
JMS I XIOTG
CMA
JMS I XIOTJ
JMS I XSNDRV
JMS I NERROR
JMS I ERROR
3441
TST41
/GET AD NUMBER
/10T 6133, CLAB
/1COMPLEMENT AC
/10T 6136, CLBA
/1CHECK SEND AND RECEV REGISTERS
/1CHECK NON-ERROR HANDLER
/1ERRORI BUFFER OR AC FAILED
/1TST41 ERROR MESSAGE
/SCOPE LOOP

/DOES BUFFER SURVIVE PATTERN 5252 ?

```



```
0722 1017 /GET AC NUMBER
0723 4427 /IOT 6133, CLXB
0724 7040 /COMPLEMENT AC
0725 4432 /IOT 6136, CLBA
0726 4456 /CHECK SEND AND RECEV REGISTERS
0727 4492 /CHECK NON-ERROR HANDLER
0730 4493 /ERROR! BUFFER OR AC FAILED
0731 3442 /TST42 ERROR MESSAGE
0732 0722 /SCOPE LOOP
```

/DOES CAF REALLY CLEAR BUFFER ?

```
0733 7240 /AC TO ALL 7777
0734 4427 /IOT 6133, CLAB
0735 6007 /CAF OR CLEAR THE WORLD
0736 3070 /SAVE OUTPUT FOR ERROR PRINTER
0737 7340 /IOT 6136, CLBA
0740 4432 /WAS BUFFER ALL 0'S ?
0741 7650 /CHECK NON-ERROR HANDLER
0742 4492 /ERROR! CAF OR BUFFER FAILED
0743 4493 /TST43 ERROR MESSAGE
0744 3443 /SCOPE LOOP
0745 0753
```

/DOES CAF REALLY CLEAR BUFFER ?  
/DO ALL COMBINATIONS

```
0746 1040 /GET AC NUMBER
0747 4427 /IOT 6133, CLAB
0750 6007 /CAF OR CLEAR THE WORLD
0751 3070 /SAVE OUTPUT FOR ERROR PRINTER
0752 7340 /IOT 6136, CLBA
0753 4432 /WAS BUFFER ALL 0'S ?
0754 7650 /CHECK NON-ERROR HANDLER
0755 4492 /ERROR! CAF OR BUFFER FAILED
0756 4493 /TST44 ERROR MESSAGE
0757 3444 /SCOPE LOOP
0760 0746
```

/CHECK AC TO BUFFER REGISTER AND  
/BUFFER REGISTER TO AC TRANSFERS,  
/CHECK ALL COMBINATIONS,  
/CHECK LOAD ON BUFFER REGISTER;

```
0761 7340 /TST45, CLA CLL CMA
0762 3040 DCA REGA
0763 1041 T45B, TAD REGB
0764 4427 JMS I X10TG
0765 7040 CMA
0766 4432 JMS I X10TJ
0767 4456 JMS I XSNDRV
0770 7610 SKP CLA
0771 5375 JMP T45A
0772 2041 ISZ REGB
```

/UPDATE AC NUMBER



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0773 5363  
0774 4492  
0775 4493  
0776 3445  
0777 0761

T45A,  
JMP T45B  
JMS I NERROR  
JMS I ERROR  
3445  
TST45

/DOES READING BUFFER CHANGE ITS CONTENTS ?

1000 7340  
1001 3040  
1002 1016  
1003 4427  
1004 7040  
1005 4432  
1006 4456  
1007 7610  
1010 5214  
1011 2041  
1012 5205  
1013 4472  
1014 4473  
1015 3446  
1016 1000

T46B,  
CLA CLL CHA  
DCA REGA  
TAD K2525  
JMS I XIOT6  
CHA  
JMS I XIOTJ  
JMS I XSNDRAV  
SKP CLA  
JMP T46A  
ISE REGB  
JMP T46B  
JMS I NERROR  
JMS I ERROR  
3446  
TST46

T46A,  
/DOES READING BUFFER CHANGE ITS CONTENTS ?  
/AC TO 7777  
/GET AC NUMBER  
/IOT 6133, CLAB  
/COMPLEMENT AC  
/IOT 6136, CLBA  
/CHECK SEND AND RECEV REGISTERS  
/UPDATE COUNTER  
/DO 4096 TIMES  
/CHECK NON-ERROR HANDLER  
/ERROR! BUFFER FAILED  
/TST46 ERROR MESSAGE  
/SCOPE LOOP

/DOES READING BUFFER CHANGE ITS CONTENTS ?

1017 7340  
1020 3040  
1021 1017  
1022 4427  
1023 7040  
1024 4432  
1025 4456  
1026 7610  
1027 5233  
1030 2041  
1031 5224  
1032 4472  
1033 4493  
1034 3447  
1035 1017

T47B,  
CLA CLL CHA  
DCA REGA  
TAD K2525  
JMS I XIOT6  
CHA  
JMS I XIOTJ  
JMS I XSNDRAV  
SKP CLA  
JMP T47A  
ISE REGB  
JMP T47B  
JMS I NERROR  
JMS I ERROR  
3447  
TST47

T47A,  
/DOES BUFFER SURVIVE RANDOM PATTERNS ?  
/AC TO 7777  
/GET AC NUMBER  
/IOT 6133, CLAB  
/COMPLEMENT AC  
/IOT 6136, CLBA  
/CHECK SEND AND RECEV REGISTERS  
/UPDATE COUNTER  
/DO 4096 TIMES  
/CHECK NON-ERROR HANDLER  
/ERROR! BUFFER FAILED  
/TST47 ERROR MESSAGE  
/SCOPELOOP

/DOES BUFFER SURVIVE RANDOM PATTERNS ?

1036 7340  
1037 3040  
1040 4495  
1041 4427  
1042 7040  
1043 4432  
1044 4456  
1045 7610  
1046 5252  
1047 2041  
1050 5240

T50B,  
CLA CLL CHA  
DCA REGA  
JMS I RANDY  
JMS I XIOT6  
CHA  
JMS I XIOTJ  
JMS I XSNDRAV  
SKP CLA  
JMP T50A  
ISE REGB  
JMP T50B

T50B,  
/GET RANDOM NUMBER  
/IOT 6133, CLAB  
/COMPLEMENT AC  
/IOT 6136, CLBA  
/CHECK SEND AND RECEV REGISTERS  
/UPDATE COUNTER  
/DO 4096 TIMES



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1051	4472	JMS I NERROR
1052	4473	JMS I ERROR
1053	3450	TST50
1054	1036	TST51
1055	1040	/DOES BUFFER SURVIVE FAST TOGGLE ?
1056	3070	/
1057	1040	TST51,
1060	4435	TAD REGA
1061	3071	DCA SEND
1062	1071	TAD REGA
1063	4456	JMS I X10T51
1064	4472	DCA RECEV
1065	4473	TAD RECEV
1066	3451	JMS I XSNDRV
1067	1055	JMS I NERROR
		JMS I ERROR
		3451
		TST51
		/GET AC NUMBER
		/SAVE OUTPUT FOR ERROR PRINTER
		/IOT'S 6133 AND 6136
		/SAVE INPUT FOR ERROR PRINTER
		/CHECK SEND RECEV REGISTERS
		/CHECK NON-ERROR HANDLER
		/ERROR! BUFFER FAILED
		/TST51 ERROR MESSAGE
		/SCOPE LOOP
		/DOES AC SET ENABLE REGISTER?
		/CHECK ALL 1'S TRANSFER,
		/CHECK JAM TO AC, CLEN
1070	7340	TST52,
1071	4425	CLA CLL CHA
1072	7040	JMS I X10TF
1073	4430	CHA
1074	7040	JMS I X10TH
1075	7620	CHA
1076	4472	SNA CLA
1077	4473	JMS I NERROR
1100	4452	JMS I ERROR
1101	1070	4452
		TST52
		/DOES AC SET ENABLE REGISTER?
		/CHECK ALL 0'S TRANSFER,
		/CHECK FOR JAM TO AC, CLEN
		/
1102	7340	TST53,
1103	4425	CLA CLL CHA
1104	7300	JMS I X10TF
1105	4426	CLA CLL
1106	4430	JMS I X10TF1
1107	7040	JMS I X10TH
1110	7650	CHA
1111	4472	SNA CLA
1112	4473	JMS I NERROR
1113	4453	JMS I ERROR
1114	1102	4453
		TST53
		/DOES CAF REALLY CLEAR ENABLE REGISTER?
		/
1115	7340	TST54,
1116	4425	CLA CLL CHA
		JMS I X10TF
		/AC TO 7777
		/IOT 6132, CLOE
		/CLEAR THE AC AND LINK
		/IOT 6132, CLOE
		/IOT 6134, CLEN
		/COMPLEMENT THE AC
		/WAS ENABLE REGISTER ALL 1'S?
		/CHECK NON-ERROR HANDLER
		/ERROR!CLOE OR CLEN FAILED
		/TST53 ERROR MESSAGE
		/SCOPE LOOP



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1117	6007				/CAF OR CLEAR THE WORLD
1120	3070				/SAVE OUTPUT FOR ERROR PRINTER
1121	7340				/AC TO 7777
1122	4430				/IOT 6134, CLEN
1123	7650				/WAS REGISTER ALL 0'S
1124	4472				/CHECK NON-ERROR HANDLER
1125	4473				/ERROR! CAF, CLOE, OR CLEN FAILED
1126	4454				/TST54 ERROR MESSAGE
1127	1115				/SCOPE LOOP
/DOES CAF REALLY CLEAR ENABLE REGISTER ?					
/DO ALL COMBINATIONS					
1130	1040				TST55, /GET AC NUMBER
1131	4426				JMS I X10TF1 /IOT 6132, CLOE
1132	6007				6007 /CAF OR CLEAR THE WORLD
1133	7340				CLA CLL CHA /AC TO 7777
1134	4430				JMS I X10TH /IOT 6134, CLEN
1135	7650				SNA CLA /WAS ENABLE REGISTER ALL 0'S ?
1136	4472				JMS I NERROR /CHECK NON-ERROR HANDLER
1137	4473				JMS I ERROR /ERROR! ENABLE REGISTER FAILED
1140	4455				4455 /TST55 ERROR MESSAGE
1141	1130				TST55 /SCOPE LOOP
/DOES ENABLE REGISTER SURVIVE PATTERN 2525 ?					
1142	1016				TST56, /GET AC NUMBER
1143	4425				JMS I X10TF /IOT 6132, CLOE
1144	7040				CHA /COMPLEMENT AC
1145	4430				JMS I X10TH /IOT 6134, CLEN
1146	4456				JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1147	4472				JMS I NERROR /CHECK NON-ERROR HANDLER
1150	4473				JMS I ERROR /ERROR! EABLE REGISTER FAILED
1151	4456				4456 /TST56 ERROR MESSAGE
1152	1142				TST56 /SCOPE LOOP
/DOES ENABLE REGISTER SURVIVE PATTERN 5252 ?					
1153	1017				TST57, /GET AC NUMBER
1154	4425				JMS I X10TF /IOT 6132, CLOE
1155	7040				CHA /COMPLEMENT AC
1156	4430				JMS I X10TH /IOT 6134, CLEN
1157	4456				JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1160	4472				JMS I NERROR /CHECK NON-ERROR HANDLER
1161	4473				JMS I ERROR /ERROR! ENABLE REGISTER FAILED
1162	4457				4457 /TST57 ERROR MESSAGE
1163	1153				TST57 /SCOPE LOOP
/DOES ENABLE REGISTER SURVIVE PATTERN 2525 ?					
1164	1016				TST60, /GET AC NUMBER
1165	4425				JMS I X10TF /IOT 6132, CLOE
1166	7300				CLA CLL /CLEAR THE AC AND LINK
1167	4426				JMS I X10TF1 /IOT 6132, CLOE
1170	7340				CLA CLL CHA /AC TO 7777



[illegible]



/CHECK ALL COMBINATIONS

1244 1040  
1245 4425  
1246 7340  
1247 4430  
1250 4456  
1251 4472  
1252 4473  
1253 4464  
1254 1244

TST64, TAD REGA  
JMS I XIOTF  
CLA CLL CMA  
JMS I XIOTW  
JMS I XSNDV  
JMS I NERRR  
JMS I ERROR  
4464  
TST64  
/GET AC NUMBER  
/IOT 6132, CLOE  
/AC TO 7777  
/IOT 6134, CLEN  
/CHECK SEND AND RECEV REGISTERS  
/CHECK NON-ERROR HANDLER  
/ERRORI AC OR ENABLE REGISTER FAILED.  
/TST64 ERROR MESSAGE  
/SCOPE LOOP

/DOES ENABLE REGISTER SURVIVE COMPLEMENT PATTERN?  
/DO ALL COMBINATIONS;

1255 7340  
1256 3070  
1257 1040  
1260 4426  
1261 7040  
1262 4426  
1263 4430  
1264 4456  
1265 4472  
1266 4473  
1267 4465  
1270 1255

TST65, CLA CLL CMA  
DCA SEND  
TAD REGA  
JMS I XIOTF1  
CMA  
JMS I XIOTF1  
JMS I XIOTW  
JMS I XSNDV  
JMS I NERRR  
JMS I ERROR  
4465  
TST65  
/AC TO 7777  
/SAVE OUTPUT FOR ERROR PRINTER  
/GET AC NUMBER  
/IOT 6132, CLOE  
/COMPLEMENT THE AC  
/IOT 6132, CLOE  
/IOT 6134, CLEN  
/CHECK SEND AND RECEV REGISTERS  
/CHECK NON-ERROR HANDLER  
/ERRORI AC OR ENABLE REGISTER FAILED.  
/TST65 ERROR MESSAGE  
/SCOPE LOOP

/DOES ENABLE REGISTER SURVIVE RANDOM PATTERN ?

1271 4455  
1272 4425  
1273 7300  
1274 4430  
1275 4456  
1276 4472  
1277 4473  
1300 4466  
1301 1271

TST66, JMS I RANDY  
JMS I XIOTF  
CLA CLL  
JMS I XIOTW  
JMS I XSNDV  
JMS I NERRR  
JMS I ERROR  
4466  
TST66  
/GET RANDOM NUMBER  
/IOT 6132, CLOE  
/CLEAR THE AC AND LINK  
/IOT 6134, CLEN  
/CHECK SEND AND RECEV REGISTERS  
/CHECK NON-ERROR HANDLER  
/ERRORI ENABLE REGISTER FAILED  
/TST66 ERROR MESSAGE  
/SCOPE LOOP

/DOES ENABLE REGISTER SURVIVE RANDOM COMPLEMENT PATTERN ?

1302 7340  
1303 3070  
1304 4455  
1305 4426  
1306 7040  
1307 4426  
1310 4430  
1311 4456  
1312 4472  
1313 4473  
1314 4467  
1315 1302

TST67, CLA CLL CMA  
DCA SEND  
JMS I RANDY  
JMS I XIOTF1  
CMA  
JMS I XIOTF1  
JMS I XIOTW  
JMS I XSNDV  
JMS I NERRR  
JMS I ERROR  
4467  
TST67  
/AC TO 7777  
/SAVE OUTPUT FOR ERROR PRINTER  
/GET RANDOM NUMBER  
/COMPLEMENT AC  
/IOT 6132, CLOE  
/IOT 6134, CLEN  
/CHECK SEND AND RECEV REGISTERS  
/CHECK NON-ERROR HANDLER  
/ERRORI ENABLE REGISTER FAILED  
/TST67 ERROR MESSAGE  
/SCOPE LOOP



/DOES READING ENABLE REGISTER CHANGE ITS CONTENTS ?

1316 7340  
1317 3040  
1320 1016  
1321 4425  
1322 7340  
1323 4430  
1324 4456  
1325 7610  
1326 5332  
1327 2041  
1330 5322  
1331 4492  
1332 4493  
1333 4470  
1334 1316

TST70, CLA CLL CMĀ  
DCA REGA  
TAD K2525  
JMS I XIOTF  
CLA CLL CMĀ  
JMS I XIOTH  
JMS I XSNDRV  
SKP CLA  
JMP T70A  
ISZ REG8  
JMP T70B  
JMS I NERROR  
JMS I ERROR  
4470  
TST70

T70B, /AC TO 7777  
/GET AC NUMBER  
/IOT 6132, CLOE  
/AC TO 7777  
/IOT 6134, CLEN  
/CHECK SEND AND RECEV REGISTERS

T70A, /UPDATE COUNTER  
/DO 4096 TIMES  
/CHECK NON-ERROR HANDLER  
/ERROR! ENABLE REGISTER FAILED  
/TST70 ERROR MESSAGE  
/SCOPE LOOP

/DOES READING ENABLE REGISTER CHANGE TIS CONTENTS ?

1335 7340  
1336 3040  
1337 1017  
1340 4425  
1341 7300  
1342 4430  
1343 4456  
1344 7610  
1345 5351  
1346 2041  
1347 5341  
1350 4492  
1351 4493  
1352 4471  
1353 1335

TST71, CLA CLL CMĀ  
DCA REGA  
TAD K2522  
JMS I XIOTF  
CLA CLL  
JMS I XIOTH  
JMS I XSNDRV  
SKP CLA  
JMP T71A  
ISZ REG8  
JMP T71B  
JMS I NERROR  
JMS I ERROR  
4471  
TST71

T71B, /AC TO 7777  
/GET AC NUMBER  
/IOT 6132, CLOE  
/CLEAR THE AC AND LINK  
/IOT 6134, CLEN  
/CHECK SEND RECEV REGISTERS

T71A, /UPDATE COUNTER  
/DO 4096 TIMES  
/CHECK NON-ERROR HANDLER  
/ERROR! ENABLE REGISTER FAILED  
/TST71 ERROR MESSAGE  
/SCOPE LOOP

/DOES ENABLE REGISTER SURVIVE FAST TOGGLE ?

1354 1040  
1355 3070  
1356 1040  
1357 4434  
1360 3071  
1361 1071  
1362 4430  
1363 4492  
1364 4493  
1365 4472  
1366 1354

TST72, TAD REGA  
DCA SEND  
TAD REGA  
JMS I XIOTS  
DCA RECEV  
TAD RECEV  
JMS I XSNDRV  
JMS I NERROR  
JMS I ERROR  
4472  
TST72

/IOT'S 6132 AND 0134  
/SAVE INPUT FOR ERROR PRINTER  
/CHECK SEND RECEV REGISTERS  
/CHECK NON-ERROR HANDLER  
/ERROR! ENABLE REGISTER FAILED  
/TST72 EROR MESSAGE  
/SCOPE LOOP

/DOES CLZE CLEAR ENABLE REGISTER?

1367 7340  
1370 4426  
1371 7340

TST73, CLA CLL CMĀ  
JMS I XIOTF1  
CLA CLL CMĀ

/AC TO 7777  
/IOT 6132, CLOE



1372	1421	22-OCT-73	9155	PAGE 1-18	
1373	1422	JMS I X10T0		/IOT 6130, CLZE	
1374	1423	CLA CLL		/CLEAR THE AC AND LINK	
1375	1424	DCA SEND		/SAVE OUTPUT FOR ERROR PRINTER	
1376	1425	CLA CLL CMA		/AC TO 7777	
1377	1426	JMS I X10T0		/IOT 6134, CLEN	
1378	1427	SNA CLA		/WAS REGISTER ALL 0'S	
1379	1428	JMS I NERROR		/CHECK NON-ERROR HANDLER	
1380	1429	JMS I ERROR		/ERRORICLZE OR CLEN FAILED	
1381	1430	4473		/TST73 ERROR MESSAGE	
1382	1431	TST73		/SCOPE LOOP	
1383	1432			/DOES CLZE CLEAR ENABLE REGISTER?	
1384	1433			/	
1385	1434	TST74,		/AC TO 7777	
1386	1435	CLA CLL CMA		/IOT 6132, CLOE	
1387	1436	JMS I X10T0		/IOT 6130, CLZE	
1388	1437	CLA CLL		/AC TO 7777	
1389	1438	JMS I X10T0		/SAVE OUTPUT FOR ERROR PRINTER	
1390	1439	CLA CLL CMA		/IOT 6134, CLEN	
1391	1440	DCA SEND		/COMPLEMENT AC	
1392	1441	JMS I X10T0		/WAS REGISTER ALL 0'S?	
1393	1442	SNA CLA		/CHECK NON-ERROR HANDLER	
1394	1443	JMS I NERROR		/ERRORICLZE OR CLEN FAILED	
1395	1444	JMS I ERROR		/TST74 ERROR MESSAGE	
1396	1445	4474		/SCOPE LOOP	
1397	1446	TST74			
1398	1447			/DOES CLZE CLEAR ENABLE REGISTER?	
1399	1448			/	
1400	1449	TST75,		/IOT 6132, CLOE	
1401	1450	TAD K2525		/COMPLEMENT THE AC	
1402	1451	JMS I X10T0		/IOT 6130, CLZE	
1403	1452	CMA		/COMPLEMENT AC	
1404	1453	CMA		/SAVE OUTPUT FOR ERROR PRINTER	
1405	1454	DCA SEND		/IOT 6134, CLEN	
1406	1455	JMS I X10T0		/CHECK SEND AND RECEV REGISTERS	
1407	1456	JMS I XSNDRV		/CHECK NON-ERROR HANDLER	
1408	1457	JMS I NERROR		/ERRORICLZE, CLOE, OR CLEN FAILED	
1409	1458	JMS I ERROR		/TST75 ERROR MESSAGE	
1410	1459	4475		/SCOPE LOOP	
1411	1460	TST75			
1412	1461			/DOES CLZE CLEAR ENABLE REGISTER?	
1413	1462			/	
1414	1463	TST76,		/IOT 6132, CLOE	
1415	1464	TAD K2526		/COMPLEMENT THE AC	
1416	1465	JMS I X10T0		/IOT 6130, CLZE	
1417	1466	CMA		/COMPLEMENT AC	
1418	1467	CMA		/SAVE OUTPUT FOR ERROR PRINTER	
1419	1468	DCA SEND		/IOT 6134, CLEN	
1420	1469	JMS I X10T0		/CHECK SEND AND RECEV REGISTERS	
1421	1470	JMS I XSNDRV		/CHECK NON-ERROR HANDLER	
1422	1471	JMS I NERROR		/ERRORICLZE, CLOE, OR CLEN FAILED	
1423	1472	JMS I ERROR		/TST76 ERROR MESSAGE	
1424	1473	4476			
1425	1474	TST76			
1426	1475			/DOES CLZE CLEAR ENABLE REGISTER?	
1427	1476			/	
1428	1477	TST77,		/IOT 6132, CLOE	
1429	1478	TAD K2527		/COMPLEMENT THE AC	
1430	1479	JMS I X10T0		/IOT 6130, CLZE	
1431	1480	CMA		/COMPLEMENT AC	
1432	1481	CMA		/SAVE OUTPUT FOR ERROR PRINTER	
1433	1482	DCA SEND		/IOT 6134, CLEN	
1434	1483	JMS I X10T0		/CHECK SEND AND RECEV REGISTERS	
1435	1484	JMS I XSNDRV		/CHECK NON-ERROR HANDLER	
1436	1485	JMS I NERROR		/ERRORICLZE, CLOE, OR CLEN FAILED	
1437	1486	JMS I ERROR		/TST77 ERROR MESSAGE	
1438	1487	4477			
1439	1488	TST77			
1440	1489			/DOES CLZE CLEAR ENABLE REGISTER?	
1441	1490			/	
1442	1491	TST78,		/IOT 6132, CLOE	
1443	1492	TAD K2528		/COMPLEMENT THE AC	
1444	1493	JMS I X10T0		/IOT 6130, CLZE	
1445	1494	CMA		/COMPLEMENT AC	
1446	1495	CMA		/SAVE OUTPUT FOR ERROR PRINTER	
1447	1496	DCA SEND		/IOT 6134, CLEN	
1448	1497	JMS I X10T0		/CHECK SEND AND RECEV REGISTERS	
1449	1498	JMS I XSNDRV		/CHECK NON-ERROR HANDLER	
1450	1499	JMS I NERROR		/ERRORICLZE, CLOE, OR CLEN FAILED	
1451	1500	JMS I ERROR		/TST78 ERROR MESSAGE	
1452	1501	4478			
1453	1502	TST78			



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TST76 /SCOPE LOOP

/DOES CLZE CLEAR ENABLE REGISTER?  
/CHECK ALL COMBINATIONS

1451 1040 TST77, TAD REGA /GET AC NUMBER  
1452 4425 JMS I X10TF /IOT 6132, CLOE  
1453 4423 JMS I X10TB /IOT 6130, CLZE  
1454 7300 CLA CLL /CLEAR THE AC AND LINK  
1455 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER  
1456 7340 CLA CLL CMA /AC TO ALL 1'S  
1457 4430 JMS I X10TH /IOT 6134, CLEN  
1460 7650 SNA CLA /WAS REGISTER ALL 0'S?  
1461 4472 JMS I NERROR /CHECK NON-ERROR HANDLER  
1462 4473 JMS I ERROR /ERROR!CLZE,CLOE, OR CLEN FAILED  
1463 4477 4477 /TST77 ERROR MESSAGE  
1464 1451 TST77 /SCOPE LOOP

/DOES CLZE CLEAR ENABLE REGISTER?  
/DO ALL COMBINATIONS

1465 1040 TST100, TAD REGA /GET AC NUMBER  
1466 4425 JMS I X10TF /IOT 6132, CLOE  
1467 7040 CMA /COMPLEMENT THE AC  
1470 4423 JMS I X10TB /IOT 6130, CLZE  
1471 7040 CMA /COMPLEMENT THE AC  
1472 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER  
1473 4430 JMS I X10TH /IOT 6134, CLEN  
1474 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS  
1475 4472 JMS I NERROR /CHECK NON-ERROR HANDLER  
1476 4473 JMS I ERROR /ERROR!CLZE, CLOE, OR CLEN FAILED  
1477 4500 4500 /TST100 ERROR MESSAGE  
1500 1465 TST100 /SCOPE LOOP

/DOES CLZE SURVIVE RANDOM PATTERN ?

1501 4455 TST101, JMS I RANDV /GET RANDOM NUMBER  
1502 4425 JMS I X10TF /IOT 6132, CLOE  
1503 4423 JMS I X10TB /IOT 6130, CLZE  
1504 7300 CLA CLL /CLEAR THE AC AND LINK  
1505 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER  
1506 4430 JMS I X10TH /IOT 6134, CLEN  
1507 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS  
1510 4472 JMS I NERROR /CHECK NON-ERROR HANDLER  
1511 4473 JMS I ERROR /ERROR! ENABLE REGISTER FAILED  
1512 4501 4501 /TST101 ERROR MESSAGE  
1513 1501 TST101 /SCOPE LOOP

/DOES CLZE SURVIVE RANDOM COMPLEMENT PATTERN ?

1514 4455 TST102, JMS I RANDV /GET RANDOM NUMBER  
1515 4425 JMS I X10TF /IOT 6132, CLOE  
1516 7040 CMA /COMPLEMENT AC



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1517 4423      JMS I XIOTG      /IOT 6130, CLZE
1520 7040      CMA SEND        /COMPLEMENT AC
1521 3070      DCA SEND        /SAVE OUTPUT FOR ERROR PRINTER
1522 4430      JMS I XIOTG      /IOT 6134, CLEN
1523 4456      JMS I XSNDRV      /CHECK SEND AND RECEV REGISTERS
1524 4472      JMS I NERROR      /CHECK NON-ERROR HANDLER
1525 4473      JMS I ERROR      /ERROR! ENABLE REGISTER FAILED
1526 4502      4502            /TST102 ERROR MESSAGE
1527 1514      TST102          /SCOPE LOOP

/DOES CLZE SURVIVE FAST TOGGLE ?
/
TST103, TAD REGA      /GET AC NUMBER
1530 1040      JMS I XIOTF      /IOT 6132, CLOE
1531 4425      JMS I XIOTS3      /IOT'S 6130 AND 6134
1532 4437      DCA RECEV      /SAVE INPUT FOR ERROR PRINTER
1533 3071      TAD RECEV      /CHECK SEND RECEV REGISTERS
1534 1071      JMS I XSNDRV      /CHECK NON-ERROR HANDLER
1535 4456      JMS I NERROR      /ERROR! ENABLE REGISTER FAILED
1536 4472      JMS I ERROR      /TST103 ERROR MESSAGE
1537 4473      4503            /SCOPE LOOP
1540 4503      TST103
1541 1530

/DOES AC TRANSFER TO BUFFER THEN TO COUNTER ?
/
TST104, JMS I XIOTG      /IOT 6133, CLAB
1542 4427      CLA CLL CMA      /AC TO ALL 1'S
1543 7340      JMS I XIOTR      /IOT 6137, CLCA
1544 4433      SNA CLA          /WAS COUNTER ALL 0'S?
1545 7650      JMS I NERROR      /CHECK NON-ERROR HANDLER
1546 4492      JMS I ERROR      /ERROR! CLAB OR CLCA FAILED
1547 4473      4104            /TST104 ERROR MESSAGE
1550 4104      TST104          /SCOPE LOOP
1551 1542

/DOES AC TRANSFER TO BUFFER THEN TO COUNTER?
/
TST105, CLA CLL CMA      /IOT 6133, CLAB
1552 7340      JMS I XIOTG      /IOT 6137, CLCA
1553 4427      JMS I XIOTR      /COMPLEMENT THE AC
1554 4433      CMA CLA          /WAS COUNTER ALL 1'S?
1555 7040      SNA CLA          /CHECK NON-ERROR HANDLER
1556 7650      JMS I NERROR      /ERROR! CLAB OR CLCA FAILED
1557 4472      JMS I ERROR      /TST105 ERROR MESSAGE
1558 4473      465            /SCOPE LOOP
1561 465      TST105
1562 1552

/DOES COUNTER SURVIVE PATTERN 2525 ?
/
TST106, TAD K2525      /GET AC NUMBER
1563 1016      JMS I XIOTG      /IOT 6133, CLAB
1564 4427      CLA CLL          /CLEAR THE AC AND LINK
1565 7300      JMS I XIOTR      /IOT 6137, CLCA
1566 4433      JMS I XSNDRV      /CHECK SEND AND RECEV REGISTERS
1567 4456      JMS I NERROR      /CHECK NON-ERROR HANDLER
1570 4472

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1571 4473 JMS I ERROR /ERROR! COUNTER FAILED
1572 4106 4106 /TST106 ERROR MESSAGE
1573 1563 TST106 /SCOPE LOOP

/DOES COUNTER SURVIVE PATTERN 5252 ?
/
TST107, TAD K5252 /GET AC NUMBER
1574 1017 JMS I XIOTG /IOT 6133, CLAB
1575 4427 CLA CLL CMA /AC TO ALL 7777
1576 7340 JMS I XIOTK /IOT 6137, CLCA
1577 4433 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1600 4456 JMS I NERROR /CHECK NON-ERROR HANDLER
1601 4472 JMS I ERROR /ERROR! COUNTER FAILED
1602 4473 4107 /TST107 ERROR MESSAGE
1603 4107 TST107 /SCOPE LOOP
1604 1594

/DOES AC TRANSFER TO BUFFER THEN TO COUNTER?
/CHECK ALL COMBINATIONS
/
TST110, TAD REGA /IOT 6133, CLAB
1605 1040 JMS I XIOTG /COMPLEMENT THE AC
1606 4427 CMA /IOT 6137, CLCA
1607 7040 JMS I XIOTK /CHECK SEND AND RECEV REGISTERS
1610 4433 JMS I XSNDRV /CHECK NON-ERROR HANDLER
1611 4456 JMS I NERROR /ERROR! CLAB OR CLCA FAILED
1612 4492 JMS I ERROR /TST110 ERROR MESSAGE
1613 4473 4110 /SCOPE LOOP
1614 4110 TST110
1615 1605

/DOES COUNTER SURVIVE PAST TOGGLE?
/
TST111, TAD REGA /GET AC NUMBER
1616 1040 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
1617 3070 TAD SEND /IOT 6133 AND 6137
1620 1070 JMS I XIOTS2 /SAVE INPUT FOR ERROR PRINTER
1621 4436 DCA RECEV /CHECK SEND AND RECEV REGISTERS
1622 3071 TAD RECEV /CHECK NON-ERROR HANDLER
1623 1071 JMS I XSNDRV /ERROR!CLAB OR CLCA FAILED
1624 4456 JMS I NERROR /TST111 ERROR MESSAGE
1625 4472 JMS I ERROR /SCOPE LOOP
1626 4473 4111
1627 4111 TST111
1630 1616

/DOES CAF AFFECT COUNTER ?
/
TST112, TAD REGA /GET AC NUMBER
1631 1040 JMS I XIOTG /IOT 6133, CLAB
1632 4427 6007 /CAF OR CLEAR THE WORLD
1633 6007 JMS I XIOTK /IOT 6137, CLCA
1634 4433 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1635 4456 JMS I NERROR /CHECK NON-ERROR HANDLER
1636 4472 JMS I ERROR /ERROR! CLAB OR CLCA FAILED
1637 4473 4112 /TST112 ERROR MESSAGE
1640 4112

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1641 1631 TST112 /SCOPE LOOP

/DOES READING COUNTER CHANGE ITS CONTENTS?
/PATTERN 2525,
/
TST113, CLA CLL CHA /AC TO 7777
DCA REGA
TAD K2525
JMS I XIOTG /IOT 6133, CLAB
JMS I XIOTK /IOT 6137, CLCA
JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
SKP
JMP T113A
ISZ REGB
JMP T113B
JMS I NERROR
JMS I ERROR
T113A, 4113 /CHECK NON-ERROR
/ERROR! CLAB OR CLCA FAILED
/TS113 ERROR MESSAGE
/SCOPE LOOP
TST113

/DOES READING COUNTER CHANGE ITS CONTENTS?
/PATTERN 5252
/
TST114, CLA CLL CHA /AC TO 7777
DCA REGA
TAD K2525
JMS I XIOTG /IOT 6133, CLAB
JMS I XIOTK /IOT 6137, CLCA
JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
SKP
JMP T114A
ISZ REGB
JMP T114B
JMS I NERROR
JMS I ERROR
T114A, 4114 /CHECK NON-ERROR HANDLER
/ERROR! COUNTER FAILED
/TS114 ERROR MESSAGE
/SCOPE LOOP
TST114

/DOES COUNTER SURVIVE RANDOM PATTERN ?
/
TST115, JMS I RANDY /GET RANDOM NUMBER
JMS I XIOTG /IOT 6133, CLAB
CLA CLL CHA
JMS I XIOTK /IOT 6137, CLCA
JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
JMS I NERROR /CHECK NON-ERROR HANDLER
JMS I ERROR /ERROR! COUNTER FAILED
4115 /TS115 ERROR MESSAGE
TST115 /SCOPE LOOP

/TEST FOR NO INT, ROST.
/
TST116, CLA CLL CHA /AC TO 7777

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/
PAGE 1=23
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V142 V142
1710 4427 JMS I X10TG
1711 3040 DCA REGA
1712 1142 TAD K0010
1713 1147 TAD K0000
1714 4425 JMS I X10TF
1715 4447 JMS I XPIG01
1716 4492 JMS I NERROR
1717 4493 JMS I ERROR
1720 1116 1116
1721 1707 TST116
/DOES CLSK SKIP ON CLOCK OVERFLOW?
/SKIP EXPECTED, MODE 0, RATE 6
/
TST117, CLA CLL CMA
1722 7340 JMS I X10TG
1723 4427 CLA CLL
1724 7300 TAD K0000
1725 1147 JMS I X10TF
1726 4425 JMS I X10TE
1727 4424 SKP
1730 7410 JMS I NERROR
1731 4492 JMS I ERROR
1732 4493 0517
1733 0517 TST117
1734 1722
/DOES OVERFLOW REMAIN SET ?
/
TST120, CLA CLL CMA
1735 7340 JMS I X10TG
1736 4427 DCA REGA
1737 3040 TAD K0000
1740 1147 JMS I X10TF
1741 4425 JMS I X10TE
1742 4424 JMP T120A
1743 5351 ISZ REG8
1744 2041 JMP 1=1
1745 5344 JMS I X10TE
1746 4424 SKP
1747 7410 JMS I NERROR
1750 4492 JMS I ERROR
1751 4493 0520
1752 0520 TST120
1753 1735
T120A,
/DOES CAP CLEAR THAT FLAG ?
/
TST121, CLA CLL CMA
1754 7340 JMS I X10TG
1755 4427 DCA REGA
1756 3040 TAD K0000
1757 1147 JMS I X10TF
1760 4425 JMS I X10TE
1761 4424 JMP 1=1
1762 5361 6007
1763 6007 JMS I X10TE
1764 4424
/GET ENABLES
/IOF 6132, CLOE
/GO TO PI, NO PI EXPECTED
/CHECK NON-ERROR HANDLER
/ERROR! INT, RQST, FAILED
/TST116, ERROR MESSAGE
/SCOPE LOOP
/AC TO 7777
/IOF 6133, CLAB
/CLEAR THE AC AND LINK
/GET RATE 6
/IOF 6132, CLOE
/IOF 6131, CLSK
/CHECK NON-ERROR HANDLER
/ERROR! CLSK OR OVERFLOW FAILED
/TST117 ERROR MESSAGE
/SCOPE LOOP
/WAIT ABOUT 15 MS
/IOF 6131, CLSK
/CHECK NON-ERROR HANDLER
/ERROR! CLSK OR OVERFLOW FAILED
/TST120 ERROR MESSAGE
/SCOPE LOOP
/IOF 6133, CLAB
/GET ENABLES
/IOF 6132, CLOE
/IOF 6131, CLSK
/CAF OR CLEAR THE WORLD
/IOF 6131, CLSK

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1765	V142	2250CT-73	9135	PAGE 1024	
1770					
1771			JMS I ERROR	/CHECK NON-ERROR HANDLER	
1772			JMS I ERROR	/ERROR! CAF OR OVERFLOW FAILED	
1773			0121	/TST121 ERROR MESSAGE	
1774			TST121	/SCOPE LOOP	
1775				/DOES CLSK SKIP ON OVERFLOW ?	
1776				/SKIP EXPECTED, RATE 206, MODE 0	
1777					
1778			TST122, TAD K7773		
1779			OCA REG8		
1780			TAD K0200		
1781			OCA REG8		
1782			CLA CLL CHA	/AC TO 7777	
1783			JMS I X10TG	/IOT 6133, CLAB	
1784			OCA REG8	/GET ENABLES	
1785			TAD REG8	/IOT 6132, CLOE	
1786			JMS I X10TG	/WAIT	
1787			ISZ REG8	/IOT 6131, CLSK	
1788			JMP I 1	/NO OVERFLOW FOUND	
1789			JMS I X10TG	/UPDATE CLOCK RATE	
1790			JMP T122A	/CAF OR CLEAR THE WORLD	
1791			TAD K0100		
1792			DCA REG8		
1793			0007		
1794			ISZ REG8		
1795			JMP I XCRSI		
1796			JMS I ERROR	/CHECK NON-ERROR HANDLER	
1797			JMS I ERROR	/ERROR! CLSK OR OVERFLOW FAILED	
1798			0522	/TST122 ERROR MESSAGE	
1799			TST122	/SCOPE LOOP	
1800				/DOES CLSK SKIP ON OVERFLOW ?	
1801				/SKIP EXPECTED, RATE 206, MODE 1	
1802					
1803			TST123, TAD K7773		
1804			DCA REG8		
1805			TAD K1000		
1806			TAD K0200		
1807			DCA REG8		
1808			CLA CLL CHA	/AC TO 7777	
1809			JMS I X10TG	/IOT 6133, CLAB	
1810			DCA REG8	/GET ENABLES	
1811			TAD REG8	/IOT 6132, CLOE	
1812			JMS I X10TG	/WAIT	
1813			ISZ REG8	/IOT 6131, CLSK	
1814			JMP I 1	/NO OVERFLOW FOUND	
1815			JMS I X10TG	/UPDATE CLOCK RATE	
1816			JMP T123A	/CAF OR CLEAR THE WORLD	
1817			TAD K0100		
1818			DCA REG8		
1819			6007		
1820			ISZ REG8		
1821			JMP T123B	/DO RATES 206	
1822			JMS I ERROR	/CHECK NON-ERROR HANDLER	
1823			JMS I ERROR	/ERROR! CLSK OR OVERFLOW FAILED	



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2044	0523	0523		/TST123 ERROR MESSAGE
2045	2017	TST123		/SCOPE LOOP
		/DOES CLSK SKIP ON OVERFLOW ?		
		/SKIP EXPECTED, MODE 2, RATE 2=6		
		/		
2046	1131	TST124, TAD K7773		
2047	3041	DCA REG8		/MAKE ENABLES
2050	1143	TAD K2000		
2051	1015	TAD K0200		
2052	3044	DCA REGE		
2053	7340	CLA CLL CM1		/IOT 6133, CLAB
2054	4427	JMS I X10TG		/GET ENABLES
2055	3040	DCA REGA		/IOT 6132, CLOE
2056	1044	TAD REGE		
2057	4425	JMS I X10TF		
2060	2043	ISZ REGD		/WAIT ABOUT 15 MS
2061	5260	JMP I=1		/IOT 6131, CLSK
2062	4424	JMS I X10TE		/UPDATE RATE
2063	5272	JMP T124A		/CAF OR CLEAR THE WORLD
2064	1013	TAD K0100		/DO RATES 2=6
2065	3044	DCA REGE		/CHECK NON-ERROR HANDLER
2066	6007	6007		/ERROR! CLSK OR OVERFLOW FAILED
2067	2041	ISZ REG8		/TST124 ERROR MESSAGE
2070	5293	JMP T124B		/SCOPE LOOP
2071	4492	JMS I NERROR		
2072	4473	JMS I ERROR		
2073	0524	0524		
2074	2046	TST124		
		/DOES CLSK SKIP ON OVERFLOW ?		
		/SKIP EXPECTED, RATE 2=6, MODE 3		
		/		
2075	1131	TST125, TAD K7773		
2076	3041	DCA REG8		/MAKE ENABLES
2077	1120	TAD K3000		/SAVE ENABLES
2100	1015	TAD K0200		
2101	3044	DCA REGE		/IOT 6133, CLAB
2102	7340	CLA CLL CM1		/GET ENABLES
2103	4427	JMS I X10TG		/IOT 6132, CLOE
2104	3040	DCA REGA		
2105	1044	TAD REGE		/WAIT ABOUT 15 MS
2106	4425	JMS I X10TF		/IOT 6131, CLSK
2107	2053	ISZ REGD		/UPDATE RATE
2110	5307	JMP I=1		/DO RATES 2=6
2111	4424	JMS I X10TE		/CHECK NON-ERROR HANDLER
2112	5320	JMP T125A		/ERROR! CLSK OR OVERFLOW FAILED
2113	1013	TAD K0100		/TST125 ERROR MESSAGE
2114	3044	DCA REGE		/SCOPE LOOP
2115	2041	ISZ REG8		
2116	5302	JMP T125B		
2117	4472	JMS I NERROR		
2120	4473	JMS I ERROR		
2121	0525	0525		
2122	2095	TST125		







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2202	2152	TST127	/SCOPE LOOP	
		/DOES CLSA READ OVERFLOW BIT ?		
2203	7340	TST130,	CLA CLL CHA	
2204	4427	JMS I XIOTG	/IOT 6132, CLOE	
2205	7330	CLA CLL CML RAR	/AC TO 4000	
2206	3070	DCA SEND	/SAVE OUTPUT FOR ERROR PRINTER	
2207	7313	CLA CLL IAC RTR	/AC TO 4000	
2210	1147	TAD K0600	/GET ENABLE	
2211	4426	JMS I XIOTF1		
2212	4424	JMS I XIOTE	/IOT 6131, CLSK	
2213	5212	JMP I=1		
2214	7350	CLA CLL CHA RAR	/AC TO 3777	
2215	4431	JMS I XIOTI	/IOT 6135, CLSA	
2216	4436	JMS I XSNDRV	/CHECK SEND AND RECEV REGISTERS	
2217	4492	JMS I NERROR	/CHECK NON-ERROR HANDLER	
2220	4493	JMS I ERROR	/ERROR! CLSI OR OVERFLOW FAILED	
2221	5130	5130	/TST130 ERROR MESSAGE	
2222	2203	TST130	/SCOPE LOOP	
		/DOES CLSA CLEAR OVERFLOW FLOP ?		
		/DOES CLSA CLEAR OVERFLOW FLOP ?		
2223	7340	TST131,	CLA CLL CHA	
2224	4427	JMS I XIOTG	/AC TO 7777	
2225	7313	CLA CLL IAC RTR	/IOT 6133, CLAB	
2226	1147	TAD K0600	/AC TO 4000	
2227	4426	JMS I XIOTF1	/GET ENABLE	
2230	4424	JMS I XIOTE	/IOT 6132, CLOE	
2231	5230	JMP I=1	/IOT 6131, CLSK	
2232	7350	CLA CLL CHA RAR	/AC TO 3777	
2233	4431	JMS I XIOTI	/IOT 6135, CLSA	
2234	7300	CLA CLL	/CLEAR AC AND LINK	
2235	3070	DCA SEND	/SAVE OUTPUT FOR ERROR PRINTER	
2236	7340	CLA CLL CHA	/AC TO 7777	
2237	4431	JMS I XIOTI	/IOT 6135, CLSA	
2240	7650	SNA CLA	/WAS STATUS REGISTER ALL 0'S ?	
2241	4472	JMS I NERROR	/CHECK NON-ERROR HANDLER	
2242	4493	JMS I ERROR	/ERROR! CLSA OR OVERFLOW FAILED	
2243	5131	5131	/TST131 ERROR MESSAGE	
2244	2223	TST131	/SCOPE LOOP	
		/DOES CLSA READ OVERFLOW BIT ?		
		/DOES CLSA READ OVERFLOW BIT ?		
2245	7646	TST132,	CLA CLL CHA	
2246	4427	JMS I XIOTG	/IOT 6133, CLAB	
2247	7300	CLA CLL		
2250	3070	DCA SEND	/SAVE OUTPUT FOR ERROR PRINTER	
2251	1147	TAD K0600	/GET ENABLES	
2252	4426	JMS I XIOTF1	/IOT 6132, CLOE	
2253	4424	JMS I XIOTE	/IOT 6131, CLSK	
2254	5253	JMP I=1		
2255	7344	CLA CLL CHA RAR	/AC TO 3777	
2256	4431	JMS I XIOTI	/IOT 6135, CLSA	
2257	7650	SNA CLA	/WAS STATUS 0 ?	



2260	V142	2260CT=73	9155	PAGE 1=28
2261	4472	JMS I ERROR		/CHECK NON-ERROR HANDLER
2262	4473	JMS I ERROR		/ERROR! CLSA OR STATUS FAILED
2263	5132	5132		/TST132 ERROR MESSAGE
2264	2245	TST132		/SCOPE LOOP
/DOES BUFFER TO COUNTER ON OVERFLOW ?				
/MODE 1, RATE 2				
2265	7340	TST133,	CLCA CLL CMA	/10T 6133, CLAB
2266	4427	JMS I XIOTG		
2267	3040	DCA REGA		/AC TO 4000
2268	7313	CLCA CLL IAC RTR		
2269	1116	TAD K0400		/GET ENABLES
2270	1144	TAD K1000		/10T 6132, CLOE
2271	4426	JMS I XIOTF1		/10T 6131, CLSK
2272	4424	JMS I XIOTE		/WAIT FOR FLAG
2273	5273	JMP I-1		/CLEAR THE AC AND LINK
2274	5274	CLCA CLL		/10T 6137, CLCA
2275	7300	JMS I XIOTR		/FOR TESTING
2276	4433	CHM		/WAS COUNTER ALL 1'S ?
2277	7040	SZA		
2278	7420	JMP T133A		/10T 6135, CLSA
2279	5306	JMS I XIOTI		
2280	4431	ISE REGB		/DO TEST 4096 TIMES
2281	2041	JMP T133B		/CHECK NON-ERROR HANDLER
2282	5273	JMS I ERROR		/ERROR! COUNTER FAILED
2283	4472	JMS I ERROR		/TST133 ERROR MESSAGE
2284	4493	4133		/SCOPE LOOP
2285	4133	TST133		
/DOES BUFFER TO COUNTER ON OVERFLOW ?				
/MODE 1, RATE 4				
2311	1017	TST134,	TAD K5252	/GET AC NUMBER
2312	4427	JMS I XIOTG		/10T 6133, CLAB
2313	7340	CLCA CLL CMA		/AC TO 7777
2314	3040	DCA REGA		
2315	1144	TAD K1000		/GET ENABLES
2316	1116	TAD K0400		/10T 6132, CLOE
2317	4426	JMS I XIOTF1		/10T 6131, CLSK
2318	4424	JMS I XIOTE		/WAIT FOR FLAG
2319	5320	JMP I-1		/AC TO 7777
2320	7340	CLCA CLL CMA		/10T 6137, CLCA
2321	4433	JMS I XIOTR		/CHECK SEND AND RECV REGISTERS
2322	4496	JMS I XENDRV		/CHECK NON-ERROR HANDLER
2323	4472	JMS I ERROR		/ERROR! COUNTER FAILED
2324	4473	JMS I ERROR		/TST134 ERROR MESSAGE
2325	4134	4134		/SCOPE LOOP
2326	4134	TST134		
/DOES BUFFER TO COUNTER ON OVERFLOW ?				
/MODE 1, RATE 4				
2331	1016	TST135,	TAD K2525	/GET AC NUMBER
2332	4427	JMS I XIOTG		/10T 6133, CLAB



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/AC TO 7777
/GET ENABLES
/!OT 6132, CLOE
/!OT 6131, CLSK
/!WAIT FOR OVERFLOW
/!OT 6137, CLCA
/!CHECK SEND AND RECEV REGISTERS
/!CHECK NON-ERROR HANDLER
/!ERROR! COUNTER FAILED
/!TST135 ERROR MESSAGE
/!SCOPE LOOP

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2350 7340 /DOES BUFFER TO COUNTER ON OVERFLOW ?
2351 4427 /RATE 4, MODE 2
2352 3040 /
2353 3020 TST136, CLA CLL CHA
2354 1116 JMS I X10T0
2355 1143 DCA SEND
2356 4426 TAD K0400
2357 4424 TAD K2000
2360 5397 JMS I X10T#1
2361 4433 JMS I X10T0
2362 7650 JMP I X10T0
2363 4492 JMS I X10T0
2364 4473 SNA CLA
2365 4136 JMS I ERROR
2366 2350 JMS I ERROR
          4136
          TST136
          /SCOPE LOOP
          /SAVE OUTPUT FOR ERROR PRINTER
          /TST136 ERROR MESSAGE
          /CHECK NON-ERROR HANDLER
          /HAS COUNTER ALL 0'S ?
          /WAIT FOR FLAG
          /T0T 6137, CLCA
          /T0T 6132, CLOE
          /T0T 6131, CLSK
          /GET ENABLES
          /T0T 6133, CLAB
          /T0T 6133, CLAB
          /AC TO 7777

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2367 7340 / DOES BUFFER TO COUNTER ON OVERFLOW ?
2370 4427 / MODE 3, RATE 4
2371 3040 /
2372 3070 / TSI137, CLA CLL CM1
2373 1116 JMS I XIOTG
2374 1120 DCA REGA
2375 4426 DCA SEND
2376 4484 TAD K0400
2377 5370 TAD K3000
2380 7340 JMS I XIOTF1
2400 2400 JMS I XIOTG
2401 4433 JMS I XIOTG
2402 7680 JMS I XIOTG
2403 4492 SNA CLA
2404 4493 JMS I NERRR
2405 4137 JMS I ERROR
2406 2367 4137 TSI137

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DOES INT, WITHOUT BIT 8 ?



18	22:00CT073	9135	PAGE 1338
V132	TST140, CLA CLL CMA		
7340	JMS I X1078		/IOT 6133, CLAB
4427	DCA REGA		
3040	CLA CLL IAC RTR		/AC TO 4000
7313	TAD K0007		/GET ENABLES
1007	TAD K0000		/IOT 6132, CLOE
1147	JMS I X1078		/GO TO PI, NO PI EXPECTED
4425	JMS I XPI001		/CHECK NON-ERROR HANDLER
4425	JMS I NERROR		/ERROR! INT, RQST, OR ENA 0 FAILED
4492	JMS I ERROR		/TST140 ERROR MESSAGE
4493	1140		/SCOPE LOOP
1140	TST140		
2407			
2422			
	/DOES OVERFLOW CAUSE INT, RQST, ?		
	/RATE 6, MODE 0		
	TST141, CLA CLL CMA		/AC TO 7777
7340	JMS I X1078		/IOT 6133, CLAB
4427	CLA CLL		/CLEAR THE AC AND LINK
7300	TAD K4000		
1014	TAD K0010		/GET RATE + MODE
1142	TAD K0000		/IOT 6132, CLOE
1147	JMS I X1078		/GO TO PI, PI EXPECTED
4425	JMS I XPI004		/CHECK NON-ERROR HANDLER
4422	JMS I NERROR		/ERROR! OVERFLOW OR ENA 0 FAILED
4493	JMS I ERROR		/TST141 ERROR MESSAGE
1541	1541		/SCOPE LOOP
1541	TST141		
2436			
	/DOES INT, RQST, WITHOUT ENA 0 ?		
	/RATE 6, MODE 0		
	TST142, CLA CLL CMA		/AC TO 7777
7340	JMS I X1078		/IOT 6133, CLAB
4427	CLA CLL		/CLEAR THE AC AND LINK
7300	TAD K0010		/GET RATE + MODE
1142	TAD K0000		/IOT 6132, CLOE
1147	JMS I X1078		/GO TO PI, NO PI EXPECTED
4425	JMS I XPI003		/CHECK NON-ERROR HANDLER
4425	JMS I NERROR		/ERROR! ENA 0 FAILED
4492	JMS I ERROR		/TST142 ERROR MESSAGE
4493	1142		/SCOPE LOOP
1142	TST142		
2437			
	/DOES COUNTER COUNT ?		
	/RATE 6, MODE 0		
	TST143, CLA CLL CMA		/AC TO 7777
7340	DCA REGA		/IOT 6133, CLAB
3040	JMS I X1078		
4427	TAD K4000		/GET RATE + MODE
1014	TAD K0010		/IOT 6132, CLOE
1142	TAD K0000		
1147	JMS I X1078		
4425	JMS I XPI002		
4425	JMS I NERROR		
4492	JMS I ERROR		
4493	1142		
1142	TST143		
2437			



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2462	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
2463	4473	JMS I ERROR		/ERROR! OVERFLOW OR COUNTER FAILED
2464	1543	1543		/TST143 ERROR MESSAGE
2465	2452	TST143		/SCOPE LOOP
/DOES COUNTER COUNT ?				
/RATE 6, MODE 1				
2466	7340	TST144, CLA CMA CLL		/107 6133, CLAB
2467	3040	DCA REGA		/GET RATE * MODE
2470	4427	JMS I XIOT6		/107 6132, CLOE
2471	1121	TAD K5000		/GO TO PI
2472	1142	TAD K0010		/CHECK NON-ERROR HANDLER
2473	1147	TAD K0000		/ERROR! OVERFLOW OR COUNTER FAILED
2474	4425	JMS I XIOT6		/TST144 ERROR MESSAGE
2475	4450	JMS I XPIG02		/SCOPE LOOP
2476	4472	JMS I NERROR		
2477	4473	JMS I ERROR		
2500	1544	1544		
2501	2466	TST144		
/DOES COUNTER COUNT ?				
/RATE 6, MODE 2				
2502	7340	TST145, CLA CLL CMA		/AC TO 7777
2503	3040	DCA REGA		/107 6133, CLAB
2504	4427	JMS I XIOT6		/GET ENABLES
2505	1117	TAD K0000		/107 6132, CLOE
2506	1142	TAD K0010		/GO TO PI, PI EXPECTED
2507	1147	TAD K0000		/CHECK NON-ERROR HANDLER
2510	4425	JMS I XIOT6		/ERROR! OVERFLOW OR COUNTER FAILED
2511	4450	JMS I XPIG02		/TST145 ERROR MESSAGE
2512	4492	JMS I NERROR		/SCOPE LOOP
2513	4473	JMS I ERROR		
2514	1545	1545		
2515	2502	TST145		
/DOES COUNTER COUNT ?				
/RATE 6, MODE 3				
2516	7340	TST146, CLA CLL CMA		/AC TO 7777
2517	3040	DCA REGA		/107 6133, CLAB
2520	4427	JMS I XIOT6		/GET ENABLES
2521	1141	TAD K7000		/107 6132, CLOE
2522	1142	TAD K0010		/GO TO PI, PI EXPECTED
2523	1147	TAD K0000		/CHECK NON-ERROR HANDLER
2524	4425	JMS I XIOT6		/ERROR! COUNTER OR MODE 3 FAILED
2525	4450	JMS I XPIG02		/TST146 ERROR MESSAGE
2526	4492	JMS I NERROR		/SCOPE LOOP
2527	4473	JMS I ERROR		
2530	1546	1546		
2531	2516	TST146		
/DOES OVERFLOW CAUSE ROST, ?				
/RATE 246, MODE 0				



2532 1131  
2533 3041  
2534 1014  
2535 1142  
2536 1015  
2537 3044  
2540 7340  
2541 4427  
2542 3040  
2543 1014  
2544 4425  
2545 4447  
2546 3355  
2547 6007  
2550 1013  
2551 1044  
2552 2041  
2553 5337  
2554 4492  
2555 4493  
2556 1547  
2557 2552

/ T5T147, TAD K7773  
DCA REG8  
TAD K4000  
TAD K0010  
TAD K0200  
DCA REGE  
CLA CLL CH1  
JMS I XIOTG  
DCA REGA  
TAD REGE  
JMS I XIOTF  
JMS I XPIG01  
JMP T147A  
6007  
TAD K0100  
TAD REGE  
ISE REG8  
JMP T147B  
JMS I NERR0R  
JMS I ERROR  
T147A, 1547  
TST147  
/DOES OVERFLOW CAUSE RGST, ?  
/RATE 2=6, MODE 1  
/ TST150, TAD K7773  
DCA REG8  
TAD K5000  
TAD K0010  
TAD K0200  
DCA REGE  
CLA CLL CH1  
JMS I XIOTG  
DCA REGA  
TAD REGE  
JMS I XIOTF  
JMS I XPIG01  
JMP I XCRS3  
6007  
TAD K0100  
TAD REGE  
ISE REG8  
JMP I XCRS3  
T150A, 1550  
TST150  
/DOES OVERFLOW CAUSE RGST, ?  
/RATE 2=6, MODE 2  
/ TST151, TAD K7773  
DCA REG8

/SET UP ENABLES  
/AC TO 7777  
/IOT 6133, CLAB

/GET ENABLES  
/IOT 6132, CLOE  
/GO TO PI, PI EXPECTED  
/CAF OR CLEAR THE WORLD

/DO RATES 2=6  
/CHECK NON-ERROR HANDLER  
/ERROR! OVERFLOW OR MODE FAILED  
/TST147 ERROR MESSAGE  
/SCOPE LOOP

/MAKE ENABLES

/AC TO 7777  
/IOT 6133, CLAB

/GET ENABLES  
/IOT 6132, CLOE  
/GO TO PI, PI EXPECTED  
/CAF OR CLEAR THE WORLD

/CHECK NON-ERROR HANDLER  
/ERROR! OVERFLOW OR MODE FAILED  
/TST150 ERROR MESSAGE  
/SCOPE LOOP

2560 1131  
2561 3041  
2562 1141  
2563 1142  
2564 1015  
2565 3044  
2566 7320  
2567 4487  
2570 3040  
2571 1044  
2572 4425  
2573 4437  
2574 5573  
2575 6007  
2576 1013  
2577 1044  
2600 2041  
2601 1550  
2602 4492  
2603 4493  
2604 1550  
2605 2560

2606 1131  
2607 3041



2610 1117 TAD K0000  
2611 1142 TAD K0010  
2612 1015 TAD K0200  
2613 3044 DCA REGE  
2614 7340 CLA CLL CM1  
2615 4427 JMS I X10T0  
2616 3040 DCA REGA  
2617 1044 TAD REGE  
2620 4425 JMS I X10T0  
2621 4447 JMS I XPIG01  
2622 5231 JMP T151A  
2623 6007  
2624 1013 TAD K0100  
2625 1044 TAD REGE  
2626 2041 ISZ REGB  
2627 5213 JMP T151B  
2630 4472 JMS I NERROR  
2631 4493 JMS I ERROR  
2632 1591  
2633 2606 TST151

T151B,  
/MAKE ENABLES  
/AC TO 7777  
/IOT 6133, CLAB  
/GET ENABLES  
/IOT 6132, CLOE  
/GO TO PI, PI EXPECTED  
/CAP OR CLEAR THE WORLD

T151A,  
/CHECK NON-ERROR HANDLER  
/ERROR! OVERFLOW OR MODE FAILED  
/TST151 ERROR MESSAGE  
/SCOPE LOOP

/DOES OVERFLOW CAUSE ROST, ?  
/RATE 2=6, MODE 3  
/

2634 1131 TST152,  
2635 3041 TAD K7773  
2636 1141 DCA REGB  
2637 1142 TAD K7000  
2640 1015 TAD K0010  
2641 3044 TAD K0200  
2642 7320 DCA REGE  
2643 4427 CLA CLL CM1  
2644 3040 JMS I X10T0  
2645 1044 DCA REGA  
2646 4425 TAD REGE  
2647 4447 JMS I X10T0  
2650 5237 JMS I XPIG01  
2651 6007 JMP T152A  
2652 1013  
2653 1044 TAD K0100  
2654 2041 TAD REGE  
2655 5241 ISZ REGB  
2656 4492 JMP T152B  
2657 4473 JMS I NERROR  
2658 1552 JMS I ERROR  
2661 2634 TST152

T152B,  
/MAKE ENABLES  
/AC TO 7777  
/IOT 6133, CLAB  
/GET ENABLES  
/IOT 6132, CLOE  
/GO TO PI, PI EXPECTED  
/CAP OR CLEAR THE WORLD

T152A,  
/DO RATES 2=6  
/CHECK NON-ERROR HANDLER  
/ERROR! OVERFLOW OR MODE FAILED  
/TST152 ERROR MESSAGE  
/SCOPE LOOP

/DOES OVERFLOW CAUSE ROST, ?  
/RATE 0=7, MODE 1, DISABLE BIT 7  
/

2662 1122 TST153,  
2663 3041 TAD K7770  
2664 1121 DCA REGB  
2665 1142 TAD K5000  
2666 1140 TAD K0010  
TAD K0020



[illegible]



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2746	4473	JMS I ERROR		/ERROR! OVERFLOW OR COUNTER FAILED
2747	1555	1555		/TST155 ERROR MESSAGE
2750	2736	TST155		/SCOPE LOOP
/DOES CLSK SKIP THEN INTERRUPT ?				
/RATE 6, MODE 0				
2751	7340	TST156, CLA CLL CMA	/AC TO 7777	
2752	4427	JMS I X10TG	/IOT 6133, CLAB	
2753	7330	CLA CLL CML RAR		
2754	1142	TAD K0010	/MAKE ENABLES	
2755	1147	TAD K0000	/IOT 6132, CLOE	
2756	4425	JMS I X10TF	/IOT 6131, CLSK	
2757	4424	JMS I X10TE	/WAIT FOR OVERFLOW	
2760	5357	JMP I=1	/GO TO PI, PI EXPECTED	
2761	4482	JMS I XPIG04	/CHECK NON-ERROR HANDLER	
2762	4492	JMS I NERROR	/ERROR! CLSK OR PI FAILED	
2763	4473	JMS I ERROR	/TST156 ERROR MESSAGE	
2764	1556	1556	/SCOPE LOOP	
2765	2751	TST156		
/CHECK FOR NO INT, RQST,				
/MODE 0, RATE 6, DISABLE WITH CLSA				
2766	7340	TST157, CLA CLL CMA	/AC TO 7777	
2767	4427	JMS I X10TG	/IOT 6133, CLAB	
2770	7330	CLA CLL CML RAR	/AC TO 4000	
2771	1147	TAD K0010	/IOT 6132, CLOE	
2772	1142	JMS I X10TF	/IOT 6131, CLSK	
2773	4425	JMS I X10TE	/WAIT FOR OVERFLOW	
2774	4424	JMS I X10T	/IOT 6135, CLSA	
2775	5374	JMP I=1	/GO TO PI, NO PI EXPECTED	
2776	4431	JMS I XPIG03	/CHECK NON-ERROR HANDLER	
2777	4451	JMS I NERROR	/ERROR! INT, RQST, FAILED	
3000	4492	JMS I ERROR	/TST157 ERROR MESSAGE	
3001	4473	1157	/SCOPE LOOP	
3002	1157	TST157		
3003	2766			
/DOES CLOCK FREQUENCY TIME OUT ?				
/RATE 2, MODE 0				
3004	7340	TST160, CLA CLL CMA	/AC TO 7777	
3005	3040	DCA REGA		
3006	1251	TAD KTA		
3007	3076	DCA KREGC	/IOT 6133, CLAB	
3010	4427	JMS I X10TG	/MAKE ENABLES	
3011	1014	TAD K4000	/IOT 6132, CLOE	
3012	1142	TAD K0010		
3013	1015	TAD K0200	/CHECK NON-ERROR HANDLER	
3014	4425	JMS I X10TF	/ERROR! CLOCK FREQUENCY FAST	
3015	4453	JMS I XPIG05		
3016	7610	SKP CLA		
3017	4472	JMS I NERROR		
3020	4473	JMS I ERROR		



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3021	2160	2160		/TST162 ERROR MESSAGE
3022	3004	TST160		/SCOPE LOOP
/DOES CLOCK FREQUENCY TIME OUT ?				
/RATE 2, MODE 0				
3023	7340	TST161,	CLA CLL CHA	/AC TO 7777
3024	3040		DCA REGA	
3025	1152		TAD KTA1	
3026	3076		DCA KREGC	
3027	4427		JMS I X1076	/10T 6133, CLAB
3028	1014		TAD K4000	
3030	1014		TAD K0010	
3031	1142		TAD K0200	/MAKE ENABLES
3032	1015		JMS I X1076	/10T 6132, CLOE
3033	4425		JMS I XPIG05	/CHECK NON-ERROR HANDLER
3034	4453		JMS I NERR0R	/ERROR! CLOCK FREQUENCY SLOW
3035	4472		JMS I ERROR	/TST161 ERROR MESSAGE
3036	4493		2561	/SCOPE LOOP
3037	2561		TST161	
3040	3023			
/DOES CLOCK FREQUENCY TIME OUT ?				
/RATE 3, MODE 0				
3041	7340	TST162,	CLA CLL CHA	/AC TO 7777
3042	3040		DCA REGA	
3043	1153		TAD KTB	
3044	3076		DCA KREGC	
3045	4427		JMS I X1076	/10T 6133, CLAB
3046	1014		TAD K4000	
3047	1142		TAD K0010	
3048	1145		TAD K0300	/MAKE ENABLES
3050	4425		JMS I X1076	/10T 6132, CLOE
3051	4453		JMS I XPIG05	
3052	4453		SKP CLA	/CHECK NON-ERROR HANDLER
3053	7610		JMS I NERR0R	/ERROR! CLOCK FREQUENCY FAST
3054	4472		JMS I ERROR	/TST162 ERROR MESSAGE
3055	4493		2162	/SCOPE LOOP
3056	2162		TST162	
3057	3041			
/DOES CLOCK FREQUENCY TIME OUT ?				
/RATE 3, MODE 0				
3060	7340	TST163,	CLA CLL CHA	/AC TO 7777
3061	3040		DCA REGA	
3062	1154		TAD KTB1	
3063	3076		DCA KREGC	
3064	4427		JMS I X1076	/10T 6133, CLAB
3065	1014		TAD K4000	
3066	1142		TAD K0010	
3067	1145		TAD K0300	/MAKE ENABLES
3070	4425		JMS I X1076	/10T 6132, CLOE
3071	4453		JMS I XPIG05	/CHECK NON-ERROR HANDLER
3072	4472		JMS I NERR0R	/ERROR! CLOCK FREQUENCY SLOW
3073	4493		JMS I ERROR	



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3074	2563	2563		/TST163 ERROR MESSAGE
3075	3060	TST163		/SCOPE LOOP
		/DOES CLOCK FREQUENCY TIME OUT ?		
		/RATE 4, MODE 0		
3076	7340	TST164, CLA CLL CMĀ		/AC TO 7777
3077	3040	DCA REGA		
3100	1135	TAD KTC		
3101	3076	DCA KREGC		
3102	1156	TAD KTC1		
3103	3043	DCA REGD		
3104	4427	JMS I XIOTG		/SET TIMER FOR 10000 CPS CLOCK
3105	1014	TAD K4000		/IOT 6133, CLAB
3106	1142	TAD K0010		
3107	1116	TAD K0400		/MAKE ENABLES
3110	4425	JMS I XIOTP		/IOT 6132, CLOE
3111	4453	JMS I XPIG05		
3112	7610	SKP CLA		
3113	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
3114	4473	JMS I ERROR		/ERROR! CLOCK FREQUENCY FAST
3115	2164	2164		/TST164 ERROR MESSAGE
3116	3076	TST164		/SCOPE LOOP
		/DOES CLOCK FREQUENCY TIME OUT ?		
		/RATE 4, MODE 0		
3117	7340	TST165, CLA CLL CMĀ		/AC TO 7777
3120	3040	DCA REGA		
3121	1135	TAD KTC		
3122	3076	DCA KREGC		
3123	1187	TAD KTC2		
3124	3043	DCA REGD		/SET TIMER FOR 10000 CLOCK
3125	4427	JMS I XIOTG		/IOT 6133, CLAB
3126	1014	TAD K4000		
3127	1142	TAD K0010		/MAKE ENABLES
3130	1116	TAD K0400		/IOT 6132, CLOE
3131	4425	JMS I XIOTP		
3132	4453	JMS I XPIG05		/CHECK NON-ERROR HANDLER
3133	4472	JMS I NERROR		/ERROR! CLOCK FREQUENCY SLOW
3134	4473	JMS I ERROR		/TST165 ERROR MESSAGE
3135	2565	2565		/SCOPE LOOP
3136	3117	TST165		
		/DOES CLOCK FREQUENCY TIME OUT ?		
		/RATE 5, MODE 0		
3137	7340	TST166, CLA CLL CMĀ		/AC TO 7777
3140	3040	DCA REGA		
3141	7350	CLA CLL CMĀ RAR		
3142	4427	JMS I XIOTG		/IOT 6133, CLAB
3143	7300	CLA CLL		/CLEAR THE AC AND LINK
3144	1160	TAD KTD		
3145	3043	DCA REGD		/SET TIMER FOR 10000 CPS CLOCK
3146	1014	TAD K4000		



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3147	1142				
3150	1146	TAD K0010		/MAKE ENABLES	
3151	4425	TAD K0500		/10T 6132, CLOE	
3152	4447	JMS I X10T0			
3153	4472	JMS I XPIG01		/CHECK NON-ERROR HANDLER	
3154	4473	JMS I NERR0R		/ERROR! CLOCK FREQUENCY FAST	
3155	2166	JMS I ERROR		/TST166 ERROR MESSAGE	
3156	3137	2166		/SCOPE LOOP	
		TST166			
				/DOES CLOCK FREQUENCY TIME OUT ?	
				/RATE 5, MODE 0	
				/	
3157	7340	TST167, CLA CLL CHA		/AC TO 7777	
3160	3040	DCA REGA			
3161	7350	CLA CLL CHA RAR			
3162	4427	JMS I X10T0		/10T 6133, CLAB	
3163	7300	CLA CLL		/CLEAR THE AC AND LINK	
3164	1161	TAD KTD1			
3165	3043	DCA REGD		/SET TIMER FOR 100000 CPS CLOCK	
3166	1014	TAD K4000			
3167	1142	TAD K0010		/MAKE ENABLES	
3170	1146	TAD K0500		/10T 6132, CLOE	
3171	4425	JMS I X10T0			
3172	4450	JMS I XPIG02		/CHECK NON-ERROR HANDLER	
3173	4492	JMS I NERR0R		/ERROR! CLOCK FREQUENCY SLOW	
3174	4493	JMS I ERROR		/TST167 ERROR MESSAGE	
3175	2567	2567		/SCOPE LOOP	
3176	3157	TST167			
				/DOES CLOCK FREQUENCY TIME OUT ?	
				/RATE 6, MODE 0	
				/	
3177	7340	TST170, CLA CLL CHA		/AC TO 7777	
3200	3040	DCA REGA			
3201	1162	TAD KTE			
3202	3043	DCA REGD		/SET TIMER FOR 100000 CPS CLOCK	
3203	4427	JMS I X10T0		/10T 6133, CLAB	
3204	1014	TAD K4000			
3205	1142	TAD K0010		/MAKE ENABLES	
3206	1147	TAD K0600		/10T 6132, CLOE	
3207	4425	JMS I X10T0			
3210	4447	JMS I XPIG01		/CHECK NON-ERROR HANDLER	
3211	4492	JMS I NERR0R		/ERROR! CLOCK FREQUENCY FAST	
3212	4493	JMS I ERROR		/TST170 ERROR MESSAGE	
3213	2156	2170		/SCOPE LOOP	
3214	3177	TST170			
				/DOES CLOCK FREQUENCY TIME OUT ?	
				/RATE 6, MODE 0	
				/	
3215	7340	TST171, CLA CLL CHA		/AC TO 7777	
3216	3040	DCA REGA			
3217	1163	TAD KTE1			
3220	3043	DCA REGD		/SET TIMER FOR 100000 CPS CLOCK	
3221	4427	JMS I X10T0		/10T 6133, CLAB	



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3222	1014	TAD K4000		
3223	1142	TAD K0010		/MAKE ENABLES
3224	1147	TAD K0600		/IOT 6132, CLOE
3225	4425	JMS I X107F		
3226	4450	JMS I XPI002		/CHECK NON-ERROR HANDLER
3227	4472	JMS I NERROR		/ERROR! CLOCK FREQUENCY SLOW
3230	4473	JMS I ERROR		/TST171 ERROR MESSAGE
3231	2571	2571		/SCOPE LOOP
3232	3215	TST171		
		/DOES COUNTER REALLY COUNT ?		
		/RATE 2, MODE 0		
3233	7340	TST172, CLA CLL CMA		/AC TO 7777
3234	4427	JMS I X107G		/IOT 6133, CLAB
3235	3040	DCA REGA		
3236	1015	TAD K0200		/GET RATE + MODE
3237	4426	JMS I X107F1		/IOT 6132, CLOE
3240	7300	CLA CLL		/CLEAR THE AC AND LINK
3241	3042	DCA REGC		
3242	1041	TAD REGB		/SAVE OUTPUT FOR ERROR PRINTER
3243	3070	DCA SEND		/IOT 6137, CLCA
3244	4433	JMS I X107R		
3245	7041	CIA		/COMPARE TO THIS REGISTER
3246	1041	TAD REGB		/ARE THEY THE SAME YET ?
3247	7050	SNA CLA		/YES, TEST NEXT NUMBER
3250	5254	JMP T172A		
3251	2042	ISE REGC		/WAIT ABOUT 15 MS FOR REGISTER
3252	5244	JMP T172B		/NUMBER NOT FOUND
3253	5257	JMP T172A1		/UPDATE COMPARE REGISTER
3254	2041	ISE REGB		/TEST FOR NEXT COUNTER PULSE
3255	5240	JMP T172B1		/CHECK NON-ERROR HANDLER
3256	4472	JMS I NERROR		/ERROR! COUNTER FAILED
3257	4473	JMS I ERROR		/TST172 ERROR MESSAGE
3260	4172	4172		/SCOPE LOOP
3261	3233	TST172		
		/DOES COUNTER REALLY COUNT ?		
		/RATE 3, MODE 0		
3262	7340	TST173, CLA CLL CMA		/AC TO 7777
3263	4427	JMS I X107G		/IOT 6133, CLAB
3264	3040	DCA REGA		
3265	1145	TAD K0300		/GET RATE + MODE
3266	4426	JMS I X107F1		/IOT 6132, CLOE
3267	7300	CLA CLL		/CLEAR THE AC AND LINK
3270	3042	DCA REGC		
3271	1041	TAD REGB		/SAVE OUTPUT FOR ERROR PRINTER
3272	3070	DCA SEND		/IOT 6137, CLCA
3273	4433	JMS I X107R		
3274	7041	CIA		/COMPARE TO THIS REGISTER
3275	1041	TAD REGB		/ARE THEY THE SAME YET ?
3276	7050	SNA CLA		/YES, TEST NEXT NUMBER
3277	5303	JMP T173A		
3300	2042	ISE REGC		



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3301	5293	JMP T173B		/WAIT ABOUT 15 MS FOR REGISTER
3302	5306	JMP T173A1		/NUMBER NOT FOUND
3303	2041	ISE REGB		/UPDATE COMPARE REGISTER
3304	5267	JMP T173B1		/TEST FOR NEXT COUNTER PULSE
3305	4472	JMS I ERROR		/CHECK NON-ERROR HANDLER
3306	4473	JMS I ERROR		/ERROR! COUNTER FAILED
3307	4173	JMS I ERROR		/TST173 ERROR MESSAGE
3310	3262	TST173		/SCOPE LOOP
/DOES COUNTER REALLY COUNT ?				
/RATE 2, MODE 1				
3311	7340	TST174,	CL A CLL CMA	/AC TO 7777
3312	4427	JMS I X10TG		/IOT 6133, CLAB
3313	3040	DCA REGA		
3314	1015	TAD K0200		/GET RATE + MODE
3315	1144	TAD K1000		/IOT 6132, CLOE
3316	4426	JMS I X10TF1		/IOT 6131, CLSK
3317	4424	JMS I X10TE		
3320	5317	JMP .-1		/CLEAR THE AC AND LINK
3321	7300	CL A CLL		/IOT 6133, CLAB
3322	4427	JMS I X10TG		
3323	3042	DCA REGC		/SAVE OUTPUT FOR ERROR PRINTER
3324	1041	TAD REGB		/IOT 6137, CLCA
3325	3090	DCA SEND		/COMPARE TO THIS REGISTER
3326	4433	JMS I X10TR		/ARE THEY THE SAME YET ?
3327	7041	CIA		/YES, TEST NEXT NUMBER
3328	1041	TAD REGB		
3331	7690	SNA CLA		/WAIT ABOUT 15 MS FOR REGISTER
3332	5336	JMP T174A		/NUMBER NOT FOUND
3333	2042	ISE REGC		/UPDATE COMPARE REGISTER
3334	5326	JMP T174B		/TEST FOR NEXT COUNTER PULSE
3335	5341	JMP T174A1		/CHECK NON-ERROR HANDLER
3336	2041	ISE REGB		/ERROR! COUNTER FAILED
3337	5323	JMP T174B1		/TST174 ERROR MESSAGE
3340	4472	JMS I ERROR		/SCOPE LOOP
3341	4473	JMS I ERROR		
3342	4174	JMS I ERROR		
3343	5311	TST174		
/DOES COUNTER REALLY COUNT ?				
/RATE 4, MODE 1				
3344	7340	TST175,	CL A CLL CMA	/AS TO 7777
3345	4427	JMS I X10TG		/IOT 6133, CLAB
3346	3040	DCA REGA		
3347	1116	TAD K0400		/GET RATE + MODE
3350	1144	TAD K1000		/IOT 6132, CLOE
3351	4426	JMS I X10TF1		/IOT 6131, CLSK
3352	4424	JMS I X10TE		
3353	5352	JMP .-1		/CLEAR THE AC AND LINK
3354	7300	CL A CLL		/IOT 6133, CLAB
3355	4427	JMS I X10TG		
3356	3042	DCA REGC		
3357	1041	TAD REGB		



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3361 3070 JMS I X10TR
3362 4433 CIA
3363 7041 TAD REGB
3364 1041 SNA CLA
3365 7650 JMP T175A
3366 5371 ISZ REGC
3367 2042 JMP T175B
3368 5361 JMP T175A1
3369 5374 ISZ REGB
3370 2041 JMP T175B1
3371 5396 JMS I NERRR
3372 4472 JMS I ERROR
3373 4473 JMS I ERROR
3374 4175 TST175
3375 5344
3376

/DOES COUNTER REALLY COUNT ?
/RATE 2, MODE 2
TST176, CLA CLL CMA
3377 7340 JMS I X10TG
3378 4427 DCA REGA
3379 3040 TAD K0200
3380 1015 TAD K0200
3381 1143 JMS I X10TP1
3382 4426 CLA CLL
3383 7300 DCA REGC
3384 3042 TAD REGB
3385 1041 DCA SEND
3386 3070 JMS I X10TR
3387 4433 CIA
3388 7041 TAD REGB
3389 1041 SNA CLA
3390 7650 JMP T176A
3391 5221 ISZ REGC
3392 2042 JMP T176B
3393 5211 JMP T176A1
3394 5224 ISZ REGB
3395 2041 JMP T176B1
3396 5205 JMS I NERRR
3397 4472 JMS I ERROR
3398 4473 JMS I ERROR
3399 4176 TST176
3400 3397

/DOES COUNTER REALLY COUNT ?
/RATE 4, MODE 2
TST177, CLA CLL CMA
3401 7340 JMS I X10TG
3402 4427 DCA REGA
3403 3040 TAD K0400
3404 1116 TAD K0400
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3437	V142	22=0CT=73	9155	PAGE 1=42
3440	1041	TAD REG8		
3441	3070	DCA SEND		/SAVE OUTPUT FOR ERROR PRINTER
3442	3433	JMS I X10TR		/IOT 6137, CLCA
3443	7041	CIA		/COMPARE TO THIS REGISTER
3444	1041	TAD REG8		/ARE THEY THE SAME YET ?
3445	7050	SNA CLA		/YES, TEST NEXT NUMBER
3446	5251	JMP T177A		
3447	5251	ISE REGC		/WAIT ABOUT 15 MS FOR REGISTER
3448	5241	JMP T177B		/NUMBER NOT FOUND
3449	5234	JMP T177A1		/UPDATE COMPARE REGISTER
3450	2041	ISE REG8		/TEST FOR NEXT COUNTER PULSE
3451	5235	JMP T177B1		/CHECK NON-ERROR HANDLER
3452	4472	JMS I NERROR		/ERROR! COUNTER FAILED
3453	4473	JMS I ERROR		/TST177 ERROR MESSAGE
3454	4177	JMS I 4177		/SCOPE LOOP
3455	4177	TST177		
3456	3427			
/DOES COUNTER REALLY COUNT ?				
/RATE 4, MODE 3				
3457	7340	TST200,		/AC TO 7777
3460	4427	CLA CLL CHA		/IOT 6133, CLAB
3461	3040	JMS I X10TR		
3462	1110	DCA REGA		/GET RATE & MODE
3463	1120	TAD K0400		/IOT 6132, CLOE
3464	4426	TAD K0400		/CLEAR THE AC AND LINK
3465	7300	JMS I X10TP1		
3466	3042	CLA CLL		
3467	1041	DCA REGC		/SAVE OUTPUT FOR ERROR PRINTER
3470	3090	TAD REG8		/IOT 6137, CLCA
3471	4493	DCA SEND		/COMPARE TO THIS REGISTER
3472	7041	JMS I X10TR		/ARE THEY THE SAME YET ?
3473	1041	CIA		/YES, TEST NEXT NUMBER
3474	7050	TAD REG8		/WAIT ABOUT 15 MS FOR REGISTER
3475	5301	SNA CLA		/NUMBER NOT FOUND
3476	2042	JMP T200A		/UPDATE COMPARE REGISTER
3477	5291	ISE REGC		/TEST FOR NEXT COUNTER PULSE
3500	3304	JMP T200B		/CHECK NON-ERROR HANDLER
3501	2041	JMP T200A1		/ERROR! MODE 3, COUNTER FAILED
3502	5265	ISE REG8		/TST200 ERROR MESSAGE
3503	4472	JMP T200B1		/SCOPE LOOP
3504	4473	JMS I NERROR		
3505	4200	JMS I ERROR		
3506	3437	JMS I 4200		
/DO IOT'S AFFECT AC ?				
3507	7340	TST201,		/AC TO 7777
3510	4427	CLA CLL CHA		/IOT 6133, CLAB
3511	3040	JMS I X10TR		/PASS COUNT 1
3512	6007	DCA REGA		/CAF OR CLEAR THE WORLD
3513	1144	6007		
3514	1015	TAD K1000		/GET ENABLES
3515	4426	TAD K0200		/IOT 6132, CLOE
3516	4424	JMS I X10TP1		/IOT 6131, CLSK



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3517	5316	JMP I=1		/WAIT FOR COUNTER TO GET CLEARED
3520	7340	CLA CLL CHA		
3521	4423	JMS I X10TD		/IOT 6130, CLZE
3522	7300	CLA CLL		/CLEAR AC AND LINK
3523	3090	DCA SEND		/SAVE OUTPUT FOR ERROR PAINTER
3524	1041	TAD REG8		/GET AC NUMBER
3525	4432	JMS I X10TJ		/IOT 6134, CLBA
3526	7040	SZA CLA		/HAS AC ALL 0/8 ?
3527	5351	JMP T201A		
3530	1041	TAD REG8		/GET AC NUMBER
3531	4433	JMS I X10TR		/IOT 6137, CLCA
3532	7040	SZA CLA		/HAS AC ALL 0/8 ?
3533	5351	JMP T201A		
3534	1041	TAD REG8		/GET AC NUMBER
3535	4430	JMS I X10TH		/IOT 6134, CLEN
3536	7040	SZA CLA		/HAS AC ALL 0/8 ?
3537	5351	JMP T201A		
3540	1041	TAD REG8		/GET AC NUMBER
3541	4431	JMS I X10TT		/IOT 6139, CLSA
3542	7040	SZA CLA		/HAS AC ALL 0/8 ?
3543	5351	JMP T201A		
3544	4424	JMS I X10TE		/IOT 6131, CLSK SET ?
3545	5324	JMP I=1		/HAS FLAG STILL
3546	2041	ISE REG8		/UPDATE PASS COUNTER
3547	5322	JMP T201B		/TEST IOT/8 AGAIN
3550	4492	JMS I NERROR		/CHECK NON-ERROR HANDLER
3551	4473	JMS I ERROR		/ERROR! IOT FAILED
3552	3201	TST201		/TST201 ERROR MESSAGE
3553	5307	TST201		/SCOPE LOOP
3554	4570	JMS I XPASS		/TYPE PASS COMPLETE
3555	5463	JMP I XOKSEP		/CONTINUE TESTING
		/DOES INPUT 4 CAUSE INT. RST:		
		/		
3556	7300	CLA CLL		/LOAD LOOP COUNTER
3557	1112	TAD K7500		/AC TO 7777
3558	3097	DCA LOOP		
3559	7340	CLA CLL CHA		
3562	3040	DCA REGA		/AC TO 0004
3563	7307	CLA CLL IAB RTL		/GET ENABLES
3564	1142	TAD K0510		/IOT 6132, CLOC
3565	4425	JMS I X10TP		/GO TO P1, P1 EXPECTED
3566	4456	JMS I XPI602		/CHECK NON-ERROR HANDLER
3567	4472	JMS I NERROR		/ERROR! INPUT 4 FAILED
3570	4473	JMS I ERROR		/TST202 ERROR MESSAGE
3571	1002	1002		/SCOPE LOOP
3572	3561	TST202		
		/DOES INPUT 2 CAUSE INT. RST:		
		/		
3573	7340	TST203, CLA CLL CHA		/AC TO 7777
3574	3040	DCA REGA		
3575	7326	CLA CLL CHL RTL		/AC TO 0002
3576	1142	TAD K0510		/GET ENABLES



	10	V142	2200CT-73	9195	PAGE 1044
3577	4425	JMS I XIOTP	/10T 6132, CLOE		
3600	4430	JMS I XPIG02	/GO TO PI, PI EXPECTED		
3601	4472	JMS I NERROR	/CHECK NON-ERROR HANDLER		
3602	4473	JMS I ERROR	/ERROR! INPUT 2 FAILED		
3603	1603	1603	/TST203 ERROR MESSAGE		
3604	3573	TST203	/SCOPE LOOP		
			/DOES INPUT 1 CAUSE INT. ROST?		
			/		
3605	7340	TST204, CLA CLL CHM	/AC TO 7777		
3606	3040	DCA REGA	/AC TO 0001		
3607	7324	CLA CLL CHM RAL	/GET ENABLES		
3610	1142	TAD K0010	/10T 6132, CLOE		
3611	4425	JMS I XIOTP	/GO TO PI, PI EXPECTED		
3612	4430	JMS I XPIG02	/CHECK NON-ERROR HANDLER		
3613	4472	JMS I NERROR	/ERROR! INPUT 1 FAILED		
3614	4473	JMS I ERROR	/TST204 ERROR MESSAGE		
3615	1604	1604	/SCOPE LOOP		
3616	3605	TST204			
			/DOES INPUT 4 ROST? LAST ?		
			/		
3617	7340	TST205, CLA CLL CHM	/AC TO 7777		
3620	3040	DCA REGA	/AC TO 0004		
3621	7307	CLA CLL IAB RTL	/GET ENABLES		
3622	1142	TAD K0010	/10T 6132, CLOE		
3623	4425	JMS I XIOTP	/GO TO PI, PI EXPECTED		
3624	4447	JMS I XPIG01	/NO ROST, FOUND		
3625	5232	JMP T205A	/UPDATE COUNTER		
3626	2041	ISE REGB	/WAIT 15 MS		
3627	5226	JMP I=1	/GO TO PI, PI EXPECTED		
3630	4430	JMS I XPIG02	/CHECK NON-ERROR HANDLER		
3631	4472	JMS I NERROR	/ERROR! INPUT 4 FAILED		
3632	4473	JMS I ERROR	/TST205 ERROR MESSAGE		
3633	1605	1605	/SCOPE LOOP		
3634	3617	TST205			
			/DOES INPUT 2 ROST? LAST ?		
			/		
3635	7340	TST206, CLA CLL CHM	/AC TO 7777		
3636	3040	DCA REGA	/AC TO 0002		
3637	7305	CLA CLL IAB RAL	/GET ENABLES		
3640	1142	TAD K0010	/10T 6132, CLOE		
3641	4425	JMS I XIOTP	/GO TO PI, PI EXPECTED		
3642	4447	JMS I XPIG01	/NO ROST, FOUND		
3643	5200	JMP T206A	/UPDATE COUNTER		
3644	2041	ISE REGB	/WAIT 15 MS		
3645	5244	JMP I=1	/GO TO PI, PI EXPECTED		
3646	4430	JMS I XPIG02	/CHECK NON-ERROR HANDLER		
3647	4472	JMS I NERROR	/ERROR! INPUT 2 FAILED		
3650	4473	JMS I ERROR	/TST206 ERROR MESSAGE		
3651	1606	1606	/SCOPE LOOP		
3652	3635	TST206			
			/DOES INPUT 1 ROST? LAST ?		



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3653 7340 / TST207, CLA CLL CM1 /AC TO 7777
3654 3040 DCA REGA
3655 7324 CLA CLL CM1 RAL /AC TO 0001
3656 1142 TAD K0010 /GET ENABLES
3657 4425 JMS I X10TP /IOT 6132, CLOE
3660 4447 JMS I XPIG01 /GO TO P1, P1 EXPECTED
3661 5266 JMP T207A /NO RST, FOUND
3662 2041 ISZ REG8 /UPDATE COUNTER
3663 5262 JMP .01 /WAIT 15 MS
3664 4450 JMS I XPIG02 /GO TO P1, P1 EXPECTED
3665 4492 JMS I NERRR /CHECK NON-ERROR HANDLER
3666 4493 JMS I ERROR /ERROR! INPUT 1 FAILED
3667 1607 /TST207 ERROR MESSAGE
3670 3653 TST207 /SCOPE LOOP

```

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/DOES INPUTS 4,2,1 WITHOUT BIT 8 ?
/
TST210, CLA CLL CM1 /AC TO 7777
DCA REGA
CLA CLL IAC RTR /AC TO 4000
TAD K0007
TAD K0000
JMS I X10TP /IOT 6132, CLOE
JMS I XPIG01 /GO TO P1, NO P1 EXPECTED
JMS I NERRR /CHECK NON-ERROR HANDLER
JMS I ERROR /ERROR! INPUT 1 FAILED
1210 /TST210 ERROR MESSAGE
TST210 /SCOPE LOOP

```

```

/DOES INPUT 4 CAUSE SKIP ?
/
TST211, CLA CLL CM1 /AC TO 7777
DCA REGA
TAD KTIOPS
DCA REGF
CLA CLL IAC RTL /AC TO 0004
JMS I X10TP /IOT 6132, CLOE
JMS I X10TE /IOT 6131, CLSK
JMS I SKPHAT /LET'S WAIT FOR A FLAG
JMS I NERRR /CHECK NON-ERROR HANDLER
JMS I ERROR /ERROR! INPUT 4 OR SKIP FAILED
0611 /TST211 ERROR MESSAGE
TST211 /SCOPE LOOP

```

```

/DOES INPUT 2 CAUSE SKIP ?
/
TST212, CLA CLL CM1 /AC TO 7777
DCA REGA
TAD KTIOPS
DCA REGF
CLA CLL CM1 RTL /AC TO 0002
JMS I X10TP /IOT 6132, CLOE
JMS I X10TE /IOT 6131, CLSK
JMS I SKPHAT /LET'S WAIT FOR A FLAG

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3704 7340
3705 3040
3706 1113
3707 3045
3710 7307
3711 4425
3712 4424
3713 4446
3714 4492
3715 4493
3716 0611
3717 3704

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3720 7340
3721 3040
3722 1113
3723 3045
3724 7326
3725 4425
3726 4424
3727 4446

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3730	22-0CT-73	9155	PAGE 1-46
3730	JMS I NERROR		/CHECK NON-ERROR HANDLER
3731	JMS I ERROR		/ERROR! INPUT 2 OR SKIP FAILED
3732	0612		/TST212 ERROR MESSAGE
3733	TST212		/SCOPE LOOP
	/DOES INPUT 1 CAUSE SKIP ?		
3734	TST213,		/AC TO 7777
3735	CLA CLL CHA		
3736	DCA REGA		
3737	TAD KTIOPS		
3738	DCA REGF		
3739	CLA CLL IAC		/AC TO 0001
3740	JMS I XIOTF		/IOT 6132, CLOC
3741	JMS I XIOTE		/IOT 6131, CLSK
3742	JMS I SKPWAT		/LET'S WAIT FOR FLAG
3743	JMS I NERROR		/CHECK NON-ERROR HANDLER
3744	JMS I ERROR		/ERROR! INPUT 1 OR SKIP FAILED
3745	0613		/TST213 ERROR MESSAGE
3746	TST213		/SCOPE LOOP
3747			
	/DOES INPUT 4 RQST: THEN SKIP AND VICE=VERSA ?		
3750	TST214,		/AC TO 7777
3751	CLA CLL CHA		
3752	DCA REGA		
3753	CLA CLL IAC RYL		/AC TO 0004
3754	TAD K0010		/GET ENABLES
3755	JMS I XIOTF		/IOT 6132, CLOC
3756	JMS I XIOTE		/IOT 6131, CLSK
3757	JMP I XPIG01		/GO TO PI, PI EXPECTED
3758	JMP T214A		/NO RQST: FOUND
3759	JMS I XIOTE		/IOT 6131, CLSK
3760	JMP I XPIG01		/CHECK NON-ERROR HANDLER
3761	JMS I NERROR		/ERROR! INPUT 4 SKIP OR INT. RQST: FAILED
3762	JMS I ERROR		/TST214 ERROR FAILED
3763	1614		/SCOPE LOOP
3764	TST214		
3765			
3766	/DOES INPUT 2 SKIP THEN INT, RQST, AND VICE=VERSA ?		
3767	TST215,		/AC TO 7777
3768	CLA CLL CHA		
3769	DCA REGA		
3770	CLA CLL IAC RAL		/AC TO 0002
3771	TAD K0010		/GET ENABLES
3772	JMS I XIOTF		/IOT 6132, CLOC
3773	JMS I XIOTE		/IOT 6131, CLSK
3774	JMP I XPIG01		/GO TO PI, PI EXPECTED
3775	JMS I XCRS9		/IOT 6131, CLSK
3776	JMP I XIOTE		/CHECK NON-ERROR HANDLER
3777	JMS I NERROR		/ERROR! INPUT 2 SKIP OR RQST: FAILED
3778	JMS I ERROR		/TST215 ERROR MESSAGE
3779	1615		/SCOPE LOOP
3780	TST215		



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4006 7340
4007 3040
4010 7301
4011 1142
4012 4425
4013 4424
4014 5213
4015 4447
4016 5222
4017 4424
4020 5217
4021 4472
4022 4493
4023 1016
4024 4006

TST216, CLA CLL CHA
DCA REGA
CLA CLL IAC
TAD K0010
JMS I XIOTF
JMS I XIOTE
JMP I=1
JMS I XPIGHI
JMP T216A
JMS I XIOTE
JMP I=1
JMS I NERROR
JMS I ERROR
1616
TST216

T216A,
/DOES CAP CLEAR INPUT 4 INT, RQST, ?
/
TST217, CLA CLL CHA
DCA REGA
CLA CLL IAC RTL
JMS I XIOTF
JMS I XIOTE
JMP I=1
6007
CLA CLL IAC RTL
JMS I XIOTF
JMS I XIOTE
JMP I=1
6007
CLA CLL IAC RTL
JMS I XIOTF
JMS I XIOTE
JMS I NERROR
JMS I ERROR
0217
TST217

/DOES CAP CLEAR INPUT 2 RQST, ?
/
TST220, CLA CLL CHA
DCA REGA
CLA CLL IAC RAL
JMS I XIOTF
JMS I XIOTE
JMP I=1
6007
CLA CLL IAC RAL
JMS I XIOTF
JMS I XIOTE
JMP I=1
6007

7340
3040
7305
4425
4424
5204
6007
7305
4425
4424
5261
6007

/DOES INPUT 1 SKIP THEN INT, RQST, AND VICE-VERSA ?
/
TST216, CLA CLL CHA
DCA REGA
CLA CLL IAC
TAD K0010
JMS I XIOTF
JMS I XIOTE
JMP I=1
/GO TO PI, PI EXPECTED
/NOT 6131, CLSK
/CHECK NON-ERROR HANDLER
/ERROR! INPUT 1 SKIP OR INT, RQST, FAILED
/TEST216 ERROR MESSAGE
/SCOPE LOOP

T216A,
/DOES CAP CLEAR INPUT 4 INT, RQST, ?
/
TST217, CLA CLL CHA
DCA REGA
CLA CLL IAC RTL
JMS I XIOTF
JMS I XIOTE
JMP I=1
6007
CLA CLL IAC RTL
JMS I XIOTF
JMS I XIOTE
JMP I=1
6007
CLA CLL IAC RTL
JMS I XIOTF
JMS I XIOTE
JMS I NERROR
JMS I ERROR
0217
TST217

/DOES CAP CLEAR INPUT 2 RQST, ?
/
TST220, CLA CLL CHA
DCA REGA
CLA CLL IAC RAL
JMS I XIOTF
JMS I XIOTE
JMP I=1
6007
CLA CLL IAC RAL
JMS I XIOTF
JMS I XIOTE
JMP I=1
6007

7340
3040
7305
4425
4424
5204
6007
7305
4425
4424
5261
6007

/DOES INPUT 1 SKIP THEN INT, RQST, AND VICE-VERSA ?
/
TST216, CLA CLL CHA
DCA REGA
CLA CLL IAC
TAD K0010
JMS I XIOTF
JMS I XIOTE
JMP I=1
/GO TO PI, PI EXPECTED
/NOT 6131, CLSK
/CHECK NON-ERROR HANDLER
/ERROR! INPUT 1 SKIP OR INT, RQST, FAILED
/TEST216 ERROR MESSAGE
/SCOPE LOOP

T216A,
/DOES CAP CLEAR INPUT 4 INT, RQST, ?
/
TST217, CLA CLL CHA
DCA REGA
CLA CLL IAC RTL
JMS I XIOTF
JMS I XIOTE
JMP I=1
6007
CLA CLL IAC RTL
JMS I XIOTF
JMS I XIOTE
JMP I=1
6007
CLA CLL IAC RTL
JMS I XIOTF
JMS I XIOTE
JMS I NERROR
JMS I ERROR
0217
TST217

/DOES CAP CLEAR INPUT 2 RQST, ?
/
TST220, CLA CLL CHA
DCA REGA
CLA CLL IAC RAL
JMS I XIOTF
JMS I XIOTE
JMP I=1
6007
CLA CLL IAC RAL
JMS I XIOTF
JMS I XIOTE
JMP I=1
6007

7340
3040
7305
4425
4424
5204
6007
7305
4425
4424
5261
6007
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V142	4064	CLA CLL IAC RAL	/AC TO 0002
7305	4065	JMS I XIOTF	/IOT 6132, CLOE
4425	4066	JMS I XIOTE	/IOT 6131, CLSK
4424	4067	JMS I NERRR	/CHECK NON-ERROR HANDLER
4472	4070	JMS I ERROR	/ERROR! INPUT 2 SKIP OR PQST: FAILED
4473	4071	0220	/TST220 ERROR MESSAGE
4020	4072	TSI220	/SCOPE LOOP
4050			
		/DOES CAP CLEAR INPUT 3 ROST, ?	
		TSI221,	/AC TO 7777
4073	4074	CLA CLL CHA	
3040	4075	DCA REGA	
7301	4076	CLA CLL IAC	/AC TO 0001
4425	4077	JMS I XIOTF	/IOT 6132, CLOE
4424	4100	JMS I XIOTE	/IOT 6131, CLSK
5297	4101	JMP .=1	/WAIT FOR FIRST FLAG
6007	4102	6007	/CAP OR CLEAR THE WORLD
7301	4103	CLA CLL IAC	/AC TO 0001
4425	4104	JMS I XIOTF	/IOT 6132, CLOE
4424	4105	JMS I XIOTE	/IOT 6131, CLSK
5304	4106	JMP .=1	/WAIT FOR SECONED FLAG
6007	4107	6007	/CAP OR CLEAR THE WORLD
7301	4110	CLA CLL IAC	
4425	4111	JMS I XIOTF	/IOT 6132, CLOE
4424	4112	JMS I NERRR	/CHECK NON-ERROR HANDLER
4492	4113	JMS I ERROR	/ERROR! INPUT 1 SKIP OR PQST: FAILED
4493	4114	0221	/TST221 ERROR MESSAGE
0221	4115	TSI221	/SCOPE LOOP
4093			
		/DOES CLSA READ ROST, INPUT 4 ?	
		TSI222,	/AC TO 7777
4116	4117	CLA CLL CHA	
3040	4120	DCA REGA	
7307	4121	CLA CLL IAC RTL	/AC TO 0004
4425	4122	JMS I XIOTF	/IOT 6132, CLOE
4424	4123	JMS I XIOTE	/IOT 6131, CLSK
5322	4124	JMP .=1	/WAIT FOR FLAG
7040	4125	CMA	/AC TO 7773
4431	4126	JMS I XIOTF	/IOT 6135, CLSA
4456	4127	JMS I XSNDRV	/CHECK SEND AND RECEV REGISTERS
4472	4130	JMS I NERRR	/CHECK NON-ERROR HANDLER
4493	4131	JMS I ERROR	/ERROR! CLSA OR INPUT 4 FAILED
5222	4132	5222	/TST222 ERROR MESSAGE
4116		TSI222	/SCOPE LOOP
		/DOES CLSA READ ROST, INPUT 2 ?	
		TSI223,	/AC TO 7777
4133	4134	CLA CLL CHA	
3040	4135	DCA REGA	
7305	4136	CLA CLL IAC RAL	/AC TO 0002
4425	4137	JMS I XIOTF	/IOT 6132, CLOE
4424	4140	JMS I XIOTE	/IOT 6131, CLSK
5337	4141	JMP .=1	/WAIT FOR FLAG
7040		CMA	/AC TO 7775



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4142 JMS I XIOTY /IOT 6135, CLSA
4143 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4144 JMS I NERRR /CHECK NON-ERROR HANDLER
4145 JMS I ERROR /ERROR! CLSA OR INPUT 2 FAILED
4146 5223 /TST223 ERROR MESSAGE
4147 TST223 /SCOPE LOOP

/DOES CLSA READ ROST, INPUT 1 ?
TST224, CLA CLL CHA /AC TO 7777
DCA REGA /AC TO 0001
CLA CLL IAC /IOT 6132, CLOE
JMS I XIOTF /IOT 6131, CLSK
JMS I XIOTE /WAIT FOR FLAG
JMP I=1 /AC TO 7776
CHA /IOT 6135, CLSA
JMS I XIOTY /CHECK SEND AND RECEV REGISTERS
JMS I XSNDRV /CHECK NON-ERROR HANDLER
JMS I NERRR /ERROR! CLSA OR INPUT 1 FAILED
JMS I ERROR /TST224 ERROR MESSAGE
5224 /SCOPE LOOP
TST224

/DOES CLSA CLEAR INPUT 4 ROST, ?
TST225, CLA CLL CHA /AC TO 7777
DCA REGA /AC TO 0004
CLA CLL IAC RYL /IOT 6132, CLOE
JMS I XIOTF1 /IOT 6131, CLSK
JMS I XIOTE /WAIT FOR FIRST FLAG
JMP I=1 /IOT 6135, CLSA
JMS I XIOTY /IOT 6131, CLSK
JMS I XIOTE /WAIT FOR SECOND FLAG
JMP I=1 /IOT 6135, CLSA
JMS I XIOTY /IOT 6131, CLSK
JMS I XIOTE /CHECK NON-ERROR HANDLER
JMS I NERRR /ERROR! CLSA OR INPUT 1 FAILED
JMS I ERROR /TST225 ERROR MESSAGE
5225 /SCOPE LOOP
TST225

/DOES CLSA CLEAR INPUT 2 ROST, ?
TST226, CLA CLL CHA /AC TO 7777
DCA REGA /AC TO 0002
CLA CLL IAC RAL /IOT 6132, CLOE
JMS I XIOTF /IOT 6131, CLSK
JMS I XIOTE /WAIT FOR FIRST FLAG
JMP I=1 /IOT 6135, CLSA
JMS I XIOTY /IOT 6131, CLSK
JMS I XIOTE /WAIT FOR SECOND FLAG
JMP I=1 /IOT 6135, CLSA
JMS I XIOTY /IOT 6131, CLSK
JMS I XIOTE /CHECK NON-ERROR HANDLER
JMS I NERRR /ERROR! CLSA OR INPUT 1 FAILED
JMS I ERROR /TST226 ERROR MESSAGE
5226 /SCOPE LOOP
TST226

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10	2200T-73	9155	PAGE 1-50
4220	JMS I ERROR		/ERROR! CLSA OR INPUT 2 FAILED
4221	0226		/TST226 ERROR MESSAGE
4222	TST226		/SCOPE LOOP
			/DOES CLSA CLEAR INPUT 4 RST; ?
4223	TST227, CLA CLL CHA		/AC TO 7777
4224	DCA REGA		/AC TO 0001
4225	CLA CLL IAC		/IOT 6132; CLOE
4226	JMS I XIOTP		/IOT 6131; CLSK
4227	JMS I XIOTE		/WAIT FOR FIRST FLAG
4230	JMP I=1		/IOT 6135; CLSA
4231	JMS I XIOTI		/IOT 6131; CLSK
4232	JMS I XIOTE		/WAIT FOR SECOND FLAG
4233	JMP I=1		/IOT 6135; CLSA
4234	JMS I XIOTI		/IOT 6131; CLSK
4235	JMS I XIOTE		/CHECK NON-ERROR HANDLER
4236	JMS I NERROR		/ERROR! CLSA OR INPUT 1 FAILED
4237	JMS I ERROR		/TST227 ERROR MESSAGE
4240	0227		/SCOPE LOOP
4241	TST227		
			/DOES CLSA READ INPUT 4,2,1 ?
4242	TST230, CLA CLL CHA		/AC TO 7777
4243	DCA REGA		/GET ENABLES
4244	TAD K007		/IOT 6132; CLOE
4245	JMS I XIOTP		
4246	NOP		/WAIT FOR ALL
4247	ISE REGB		/IOT 6131; CLOE
4250	JMP I=2		/WAIT FOR FLAGS
4251	JMS I XIOTE		/AC TO 7777
4252	JMP I=1		/IOT 6135; CLSA
4253	CLA CLL CHA		/CHECK SEND AND RECEV REGISTERS
4254	JMS I XIOTI		/ERROR; STATUS REGISTER
4255	JMS I XSNDRA		/SAVE OUTPUT FOR ERROR PRINTER
4256	SKP CLA		/AC TO 7777
4257	JMP T230A		/IOT 6135; CLSA
4260	DCA SEND		/WAS STATUS ALL 0/1 ?
4261	CLA CLL CHA		/CHECK NON-ERROR HANDLER
4262	JMS I XIOTI		/ERROR! CLSA OR INPUTS 1,2,3 FAILED
4263	SNA CLA		/TST230 ERROR MESSAGE
4264	JMS I NERROR		/SCOPE LOOP
4265	JMS I ERROR		
4266	0230		
4267	TST230		
			/DOES INPUT 4 CLEAR BIT 7 ?
4270	TST231, CLA CLL CHA		
4271	DCA REGA		/AC TO 0004
4272	CLA CLL IAC RTL		/SAVE OUTPUT FOR ERROR PRINTER
4273	DCA SEND		/GET ENABLES
4274	TAD SEND		
4275	TAD K0020		



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4276      4426      JMS I X107P1      /IOT 6132, CLOE
4277      4424      JMS I X107E      /IOT 6131, CLSK
4300      5277      JMP I=1      /WAIT FOR FLAG
4301      7340      CLA CLL CHA      /AC TO 7777
4302      4430      JMS I X107H      /IOT 6134, CLEN
4303      4456      JMS I XSNDRV      /CHECK SEND AND RECEV REGISTERS
4304      4472      JMS I NERROR      /CHECK NON-ERROR HANDLER
4305      4473      JMS I ERROR      /ERROR! BIT 7 OR INPUT 4 FAILED
4306      4631      4631      /TST231 ERROR MESSAGE
4307      4270      TST231      /SCOPE LOOP

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/DOES INPUT 2 CLEAR BIT 7 ?
/
TST232, CLA CLL CHA
DCA REGA
CLA CLL IAC RAL      /AC TO 0002
DCA SEND      /SAVE OUTPUT FOR ERROR PRINTER
TAD SEND
TAD K0020
JMS I X107P1
JMS I X107E
JMP I=1
CLA CLL CHA
JMS I X107H
JMS I XSNDRV
JMS I NERROR
JMS I ERROR
4632
TST232
/IOT 6132, CLOE
/IOT 6131, CLSK
/WAIT FOR FLAG
/IOT 6134, CLEN
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERROR! BIT 7 OR INPUT 2 FAILED
/TST232 ERROR MESSAGE
/SCOPE LOOP

```

```

/DOES INPUT 1 CLEAR BIT 7 ?
/
TST233, CLA CLL CHA      /AC TO 7777
DCA REGA
CLA CLL IAC      /AC TO 0001
DCA SEND      /SAVE OUTPUT FOR ERROR PRINTER
TAD SEND
TAD K0020
JMS I X107P1
JMS I X107E
JMP I=1
CLA CLL CHA
JMS I X107H
JMS I XSNDRV
JMS I NERROR
JMS I ERROR
4633
TST233
/IOT 6132, CLOE
/IOT 6131, CLSK
/WAIT FOR FLAG
/AC TO 7777
/IOT 6134, CLEN
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERROR! BIT 7 OR INPUT 1 FAILED
/TST233 ERROR MESSAGE
/SCOPE LOOP

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/DOES INPUT 4,2,1 GENERATE CLR CNT ?
/MODE 3, RATE 0
/
TST234, CLA CLL CHA      /AC TO 7777
DCA REGA
TAD K2525      /GET AC NUMBER

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4350      7340
4351      3040
4352      1016

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4353	JMS I XIOTG		/IOT 6133, CLAB
4354	CLA CLL IAC RYL		/AC TO 0004
4355	TAD K3000		/GET ENABLES
4356	JMS I XIOTF1		/IOT 6132, CLOE
4357	JMS I XIOTE		/IOT 6131, CLSK
4358	JMP I=1		/WAIT FOR FLAG
4359	CLA CLL		/SAVE OUTPUT FOR ERROR PRINTER
4360	DCA SEND		/AC TO 7777
4361	CLA CLL CMH		/IOT 6137, CLCA
4362	JMS I XIOTR		/HAS COUNTER ALL 0'S ?
4363	SNA CLA		/CHECK NON-ERROR HANDLER
4364	JMS I NERROR		/ERROR! CLR CNT FAILED
4365	JMS I ERROR		/TST234 ERROR MESSAGE
4366	4234		/SCOPE LOOP
4367	TST234		
4368			
4369	/DOES INPUT 4.2.1 CAUSE CLR CNT ?		
4370	/MODE 3, RATE 0		
4371			
4372	TST235, CLA CLL CMH		/AC TO 7777
4373	DCA REGA		/GET AC NUMBER
4374	TAD K5252		/IOT 6133, CLAB
4375	JMS I XIOTG		/AC TO 0002
4376	CLA CLL IAC RAL		/GET ENABLES
4377	TAD K3000		/IOT 6132, CLOE
4378	JMS I XIOTF1		/IOT 6131, CLSK
4379	JMS I XIOTE		/WAIT FOR FLAG
4380	JMP I=1		/SAVE OUTPUT FOR ERROR PRINTER
4381	CLA CLL		/AC TO 7777
4382	DCA SEND		/IOT 6137, CLCA
4383	CLA CLL CMH		/HAS COUNTER ALL 0'S ?
4384	JMS I XIOTR		/CHECK NON-ERROR HANDLER
4385	SNA CLA		/ERROR! CLR CNT FAILED ?
4386	JMS I NERROR		/TST235 ERROR MESSAGE
4387	JMS I ERROR		/SCOPE LOOP
4388	4235		
4389	TST235		
4390			
4391	/DOES INPUT 4.2.1 TRANSFER COUNTER TO BUFFER ?		
4392			
4393	TST236, CLA CLL CMH		/AC TO 7777
4394	DCA REGA		/GET AC NUMBER
4395	TAD K2525		/IOT 6133, CLAB
4396	JMS I XIOTG		/AC-F OR CLEAR THE WORLD
4397	6027		/AC TO 0001
4398	CLA CLL IAC		/GET ENABLES
4399	TAD K3000		/IOT 6132, CLOE
4400	JMS I XIOTF1		/IOT 6131, CLSK
4401	JMS I XIOTE		/WAIT FOR FLAG
4402	JMP I=1		/AC TO 7777
4403	CLA CLL CMH		/IOT 6136, CLBA
4404	JMS I XIOTJ		/CHECK SEND AND RECEV REGISTERS
4405	JMS I XSNDRV		/CHECK NON-ERROR HANDLER
4406	JMS I NERROR		/ERROR! COUNTER TO BUFFER FAILED
4407	JMS I ERROR		
4408	4493		
4409	TST236		
4410			
4411	4414		
4412	4415		
4413	4416		
4414	4417		
4415	4418		
4416	4419		
4417	4420		
4418	4421		
4419	4422		
4420	4423		
4421	4424		
4422	4425		
4423	4426		
4424	4427		
4425	4428		
4426	4429		
4427	4430		
4428	4431		
4429	4432		
4430	4433		
4431	4434		
4432	4435		



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/ PAL10 V142 2250CY-73 9195 PAGE 1-53
4433 3636 /TST236 ERROR MESSAGE
4434 4414 /SCOPE LOOP

/DOES INPUT 4,2,1 TRANSFER COUNTER TO BUFFER ?
/
TST237, CLA CLL CHA /AC TO 7777
DCA REGA /GET AC NUMBER
TAD K5252 /IOT 6133, CLAB
JMS I X10TG /CAF OR CLEAR THE WORLD
6007 /AC TO 0001
CLA CLL IAC /GET ENABLES
TAD K3000 /IOT 6132, CLOE
JMS I X10TF1 /IOT 6131, CLSK
JMS I X10TE /WAIT FOR FLAG
JMP I 1 /AC TO 7777
CLA CLL CHA /IOT 6136, CLBA
JMS I X10TJ /CHECK SEND AND RECEV REGISTERS
JMS I XSNDRV /CHECK NON-ERROR HANDLER
JMS I NERRR /ERROR! COUNTER TO BUFFER FAILED
JMS I ERROR /TST237 ERROR MESSAGE
3637 /SCOPE LOOP
TST237

```

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/DOES INPUT 4,2,1 GENERATE CLR CNT ?
/MODE 2, RATE 0
/
TST240, CLA CLL CHA /AC TO 7777
DCA REGA /GET AC NUMBER
TAD K5252 /IOT 6133, CLAB
JMS I X10TG /CAF OR CLEAR THE WORLD
6007 /AC TO 0004
CLA CLL IAC RTL /GET ENABLES
TAD K2000 /IOT 6132, CLOE
JMS I X10TF1 /IOT 6131, CLSK
JMS I X10TE /WAIT FOR FLAG
JMP I 1 /AC TO 7777
CLA CLL CHA /IOT 6137, CLCA
JMS I X10TR /CHECK SEND AND RECEV REGISTERS
JMS I XSNDRV /CHECK NON-ERROR MESSAGE
JMS I NERRR /ERROR! CLR CNT FAILED, MODE 2
JMS I ERROR /TST240 ERROR MESSAGE
4240 /SCOPE LOOP
TST240

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/DOES INPUT 4,2,1 CAUSE CLR CNT ?
/MODE 2, RATE 0
/
TST241, CLA CLL CHA /GET AC NUMBER
DCA REGA /IOT 6133, CLAB
TAD K5252 /CAF OR CLEAR THE WORLD
JMS I X10TG /AC TO 0002
6007 /GET ENABLES
CLA CLL IAC RAL
TAD K2000

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10	22 OCT 73	9155	PAGE 1054
4506	JMS I X10T#1		/IOT 6132, CLOE
4507	JMS I X10TE		/IOT 6131, CLSK
4510	JMP I=1		/WAIT FOR FLAG
4511	CLA CLL CMA		/AC TO 7777
4512	JMS I X10T#		/IOT 6137, CLCA
4513	JMS I XSNDRV		/CHECK SEND AND RECEV REGISTERS
4514	JMS I NERRR		/CHECK NON-ERROR HANDLER
4515	JMS I ERROR		/ERROR! CLR CNT FAILED, MODE 2
4516	4241		/TST241 ERROR MESSAGE
4517	TST241		/SCOPE LOOP
	/DOES COUNTER TRANSFER TO BUFFER ?		
	/MODE 2, RATE 0		
4520	TST242, CLA CLL CMA		/AC TO 7777
4521	DCA REGA		/GET AC NUMBER
4522	TAD K2525		/IOT 6133, CLAB
4523	JMS I X10TD		/CAF OR CLEAR THE WORLD
4524	6007		
4525	CLA CLL IAC RTL		/GET ENABLES
4526	TAD K2000		/IOT 6132, CLOE
4527	JMS I X10T#1		/IOT 6131, CLSK
4530	JMS I X10TE		/WAIT FOR FLAG
4531	JMP I=1		/AC TO 7777
4532	CLA CLL CMA		/IOT 6136, CLBA
4533	JMS I X10TJ		/CHECK SEND AND RECEV REGISTERS
4534	JMS I XSNDRV		/CHECK NON-ERROR HANDLER
4535	JMS I NERRR		/ERROR! COUNTER TO BUFFER FAILED
4536	JMS I ERROR		/TST242 ERROR MESSAGE
4537	3642		/SCOPE LOOP
4540	TST242		
	/DOES COUNTER TRANSFER TO BUFFER ?		
	/MODE 2, RATE 0		
4541	TST243, CLA CLL CMA		/AC TO 7777
4542	DCA REGA		/GET AC NUMBER
4543	TAD K2522		/IOT 6133, CLAB
4544	JMS I X10TD		/CAF OR CLEAR THE WORLD
4545	6007		/AC TO 0002
4546	CLA CLL IAC RAL		/GET ENABLES
4547	TAD K2000		/IOT 6132, CLOE
4550	JMS I X10T#1		/IOT 6131, CLSK
4551	JMS I X10TE		/WAIT FOR FLAG
4552	JMP I=1		
4553	CLA CLL CMA		/IOT 6136, CLBA
4554	JMS I X10TJ		/CHECK SEND AND RECEV REGISTERS
4555	JMS I XSNDRV		/CHECK NON-ERROR HANDLER
4556	JMS I NERRR		/ERROR! COUNTER TO BUFFER FAILED
4557	JMS I ERROR		/TST243 ERROR MESSAGE
4560	3643		/SCOPE LOOP
4561	TST243		
	/DOES INPUT 4.2.1 AFFECT MODE 0 ?		



AL10 V142  
4562 7340  
4563 3040  
4564 1016  
4565 4427  
4566 6007  
4567 7307  
4570 4426  
4571 4424  
4572 5371  
4573 7340  
4574 4433  
4575 4456  
4576 4492  
4577 4493  
4600 4244  
4601 4562

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TST244, CLA CLL CMA  
DCA REGA  
TAD K2525  
JMS I XIOTG  
6007  
CLA CLL IAC RTL  
JMS I XIOTF1  
JMS I XIOTE  
JMP I1  
CLA CLL CMA  
JMS I XIOTQ  
JMS I XSNDRV  
JMS I NERROR  
JMS I ERROR  
4244  
TST244

/GET AC NUMBER  
/IOT 6133, CLAB  
/CAF OR CLEAR THE WORLD  
/AC TO 0004  
/IOT 6132, CLOE  
/IOT 6131, CLSK  
/WAIT FOR FLAG  
/AC TO 7777  
/IOT 6137, CLCA  
/CHECK SEND AND RECV REGISTERS  
/CHECK NON-ERROR HANDLER  
/ERROR! MODE 0 FAILED  
/TST 244 ERROR MESSAGE  
/SCOPE LOOP

/DOES INPUT 4,2,1 AFFECT MODE 0 ?  
/

4602 7340  
4603 3040  
4604 1017  
4605 4427  
4606 7301  
4607 4426  
4610 4424  
4611 5210  
4612 7340  
4613 4432  
4614 4456  
4615 4492  
4616 4493  
4617 3645  
4620 4602

TST245, CLA CLL CMA  
DCA REGA  
TAD K2525  
JMS I XIOTG  
CLA CLL IAC  
JMS I XIOTF1  
JMS I XIOTE  
JMP I1  
CLA CLL CMA  
JMS I XIOTJ  
JMS I XSNDRV  
JMS I NERROR  
JMS I ERROR  
3645  
TST245

/AC TO 7777  
/GET AC NUMBER  
/IOT 6133, CLAB  
/AC TO 0001  
/IOT 6132, CLOE  
/IOT 6131, CLSK  
/WAIT FOR FLAG  
/AC TO 7777  
/IOT 6136, CLBA  
/CHECK SEND RECV REGISTERS  
/CHECK NON-ERROR HANDLER  
/ERROR! MODE 0 FAILED  
/TST245 ERROR MESSAGE  
/SCOPE LOOP

/DOES INPUT 4,2,1 AFFECT MODE 1 ?  
/

4621 7340  
4622 3040  
4623 1016  
4624 4427  
4625 6007  
4626 7307  
4627 7301  
4630 1144  
4631 4426  
4632 4424  
4633 5232  
4634 7340  
4635 4432  
4636 7650  
4637 4492  
4640 4493  
4641 4246  
4642 4621

TST246, CLA CLL CMA  
DCA REGA  
TAD K2525  
JMS I XIOTG  
6007  
DCA SEND  
CLA CLL IAC  
TAD K1000  
JMS I XIOTF1  
JMS I XIOTE  
JMP I1  
CLA CLL CMA  
JMS I XIOTJ  
SNA CLA  
JMS I NERROR  
JMS I ERROR  
4246  
TST246

/AC TO 7777  
/GET AC NUMBER  
/IOT 6133, CLAB  
/CAF OR CLEAR THE WORLD  
/SAVE OUTPUT FOR ERROR PRINTER  
/AC TO 0001  
/GET ENABLES  
/IOT 6132, CLOE  
/IOT 6131, CLOE  
/WAIT FOR FLAG  
/AC TO 7777  
/IOT 6136, CLBA  
/WAS BUFFER STILL ALL 0'S ?  
/CHECK NON-ERROR HANDLER  
/ERROR! MODE 1 FAILED  
/TST246 ERROR MESSAGE  
/SCOPE LOOP



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4643 7340
4644 3040
4645 1017
4646 4427
4647 7307
4650 1144
4651 4426
4652 4424
4653 5252
4654 7340
4655 4432
4656 4456
4657 4472
4660 4473
4661 3647
4662 4643

/DOES CLSA READ INPUTS 4.2.1 ?
/
TST247, CLA CLL CMĀ /AC TO 7777
DCA REGA /GET AC NUMBER
TAD K5252 /IOT 6133, CLAB
JMS I XIOTG /AC TO 0004
CLA CLL IAC RYL
TAD K1000 /IOT 6132, CLOE
JMS I XIOTF1 /IOT 6131, CLSK
JMS I XIOTE /WAIT FOR FLAG
JMP I=1 /AC TO 7777
CLA CLL CMĀ /IOT 6136, CLBA
JMS I XIOTJ /CHECK SEND AND RECEV REGISTERS
JMS I XSNDV /CHECK NON-ERROR HANDLER
JMS I NERRR /ERROR! MODE 1 FAILED
JMS I ERROR /TST247 ERROR MESSAGE
3647 /SCOPE LOOP
TST247

/DOES CLSA READ STATUS REGISTER ?
/
TST250, CLA CLL CMĀ /AC TO 7777
DCA REGA /GET ENABLES
TAD K0007 /IOT 6132, CLOE
JMS I XIOTF1
NOP
ISZ REGB /WAIT FOR ALL
JMP I=2 /IOT 6131, CLSK
JMS I XIOTE
JMP I=1
JMS I XIOTB /IOT 6130, CLZE
CLA CLL /CLEAR THE AC AND LINK
DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
CLA CLL CMĀ /AC TO 7777
JMS I XIOTI /IOT 6135, CLSA
SNA CLA /HAS STATUS ALL 0'S ?
JMS I NERRR /CHECK NON-ERROR HANDLER
JMS I ERROR /ERROR! INPUT 4.2.1 OR STATUS FAILED
5250 /TEST250 ERROR MESSAGE
TST250 /SCOPE LOOP

/DOES CLSA READ STATUS REGISTER ?
/
TST251, CLA CLL CMĀ /AC TO 7777
DCA REGA /GET ENABLES
TAD K0007 /IOT 6132, CLOE
JMS I XIOTF1
NOP
ISZ REGB /WAIT FOR FLAGS
JMP I=2 /IOT 6131, CLSK
JMS I XIOTE
JMP I=1
CLA CLL CMĀ /AC TO 7777
JMS I XIOTI /IOT 6135, CLSA
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4721	4456	JMS I XSNDAV	/CHECK SEND AND RECEV REGISTERS	
4722	4472	JMS I NERROR	/CHECK NON=ERROR HANDLER	
4723	4473	JMS I ERROR	/ERROR! CLSA OR STATUS REGISTER	
4724	5251	5251	/TST251 ERROR MESSAGE	
4725	4706	TST251	/SCOPE LOOP	
4726	7300	CLA CLL		
4727	2097	ISZ LOOP		
4730	5464	JMP I XMITT	/DO TEST 4096 TIMES	
4731	4590	JMS I XPASS	/TYPE PASS COMPLETE	
4732	5465	JMP I XMITT	/CONTINUE TESTING	
		/NON=ERROR HANDLER FOR PROGRAM		
	5000	*5000		
5000	0000	NERROR,		
5001	6007	0000	/CAF OR CLEAR THE WORLD	
5002	2200	ISZ NERROR		
5003	2200	ISZ NERROR		
5004	2040	ISZ REGA		
5005	5215	JMP OUT		
5006	4460	JMS I XCLREG	/CLEAR ALL REGISTERS	
5007	7604	LAS		
5010	0137	AND K0040	/IS IT LOOP ON NON=	
5011	7640	SZA CLA	/FAILING TEST;	
5012	5215	JMP OUT		
5013	2200	ISZ NERROR		
5014	5600	JMP I NERROR	/TO NEXT TEST	
5015	1600	OUT,		
5016	3220	TAD I NERROR		
5017	5620	DCA ERRO		
		JMP I ERRO		
		/ERROR HANDLER FOR PROGRAM		
		/ERRQ,		
5020	0000	0000	/CAF OR CLEAR THE WORLD	
5021	6007	6007		
5022	7604	LAS		
5023	7006	RTL		
5024	7700	SMA CLA	/CHECK SWR2 FOR INH. PRINT	
5025	4503	JMS I XSORT	/GET ERROR MESSAGE	
5026	4510	JMS I XBELL	/RING BELL	
5027	4460	JMS I XCLREG		
5030	2220	ISZ ERRO		
5031	7604	LAS		
5032	0015	AND K0200		
5033	7650	SNA CLA		
5034	7402	HLT	/CHECK SWR4 FOR INH. HLT	
		EHLT1,	/MONITOR ERROR HALT; READ TYPEOUT	
			/AND REFERENCE LISTING.	
5035	7604	LAS		
5036	0013	AND K0100		
5037	7640	SZA CLA	/CHECK SWR5 FOR SCOPE LOOP	
5040	5243	JMP IN		
5041	2220	ISZ ERRO		



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5042	V142	JMP I ERRO	/ENTER SCOPE LOOP
5043	5620	TAD I ERRO	
5044	1620	DCA NERRO	
5045	3200	JMP I NERRO	
5046	5000	0000	
5047	7004	LAS	
5050	0116	AND K0400	
5051	7640	SZA CLA	
5052	5646	JMP I BELL	
5053	1006	TAD K0207	
5054	4507	JMS I XTYPE	
5055	5646	JMP I BELL	
5056	0000	0000	
5057	6046	TLS	
5060	6041	TSF	
5061	5260	JMP I 01	
5062	7200	CLA	
5063	6042	TCF	
5064	5656	JMP I TYPE	
5065	0000	CLRREG, 0000	/CLEAR THE AC AND LINK
5066	7300	CLA CLL	
5067	3041	DCA REGB	
5070	3042	DCA REGC	
5071	3043	DCA REGD	
5072	3070	DCA SEND	
5073	3071	DCA RECEV	
5074	7604	LAS	
5075	0117	AND K6000	
5076	7650	SNA CLA	
5077	7340	CLA CLL CMA	
5100	3040	DCA REGA	
5101	5665	JMP I CLRREG	
5102	0000	0000	/FIELD SERVICE CHANGE
5103	6131	6131	
5104	5702	JMP I IOTA	
5105	2302	ISZ IOTA	
5106	5702	JMP I IOTA	
5107	0000	0000	/FIELD SERVICE CHANGE
5110	5132	6132	
5111	5707	JMP I IOTB	
5112	2307	ISZ IOTB	
5113	5707	JMP I IOTB	
5114	0000	0000	/FIELD SERVICE CHANGE
5115	6133	6133	
5116	5714	JMP I IOTC	
5117	2314	ISZ IOTC	
5120	5714	JMP I IOTC	



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5121	0000	1070,	0000	/SAVE OUTPUT FOR ERROR PRINTER
5122	3070		DCA SEND	
5123	1070		TAD SEND	/FIELD SERVICE CHANGE
5124	6130		6130	
5125	5721		JMP I 107D	/SKIP TRAP, CLZE
5126	7402	EHLT2,	HLT	
		/		
5127	0000	107E,	0000	/FIELD SERVICE CHANGE
5130	6131		6131	
5131	5727		JMP I 107E	
5132	2327		ISE 107E	
5133	5727		JMP I 107E	
		/		
5134	0000	107F,	0000	/SAVE OUTPUT FOR ERROR PRINTER
5135	3070		DCA SEND	
5136	1070		TAD SEND	/FIELD SERVICE CHANGE
5137	6132		6132	
5140	5734		JMP I 107F	/SKIP TRAP, CLOE
5141	7402	EHLT3,	HLT	
		/		
5142	0000	107F1,	0000	/FIELD SERVICE CHANGE
5143	6132		6132	
5144	5742		JMP I 107F1	/SKIP TRAP, CLOE
5145	7402	EHLT4,	HLT	
		/		
5146	0000	107G,	0000	/SAVE OUTPUT FOR ERROR PRINTER
5147	3070		DCA SEND	
5150	1070		TAD SEND	/FIELD SERVICE CHANGE
5151	6133		6133	
5152	5746		JMP I 107G	/SKIP TRAP, CLAB
5153	7402	EHLT5,	HLT	
		/		
5154	0000	107H,	0000	/FIELD SERVICE CHANGE
5155	6134		6134	
5156	7410		SKP	
5157	7402		HLT	/SKIP TRAP, CLEN
5160	3071		DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5161	1071		TAD RECEV	
5162	5754		JMP I 107H	
		/		
5163	0000	107I,	0000	/FIELD SERVICE CHANGE
5164	6135		6135	
5165	7410		SKP	/SKIP TRAP, CLSA
5166	7402		HLT	/SAVE OUTPUT FOR ERROR PRINTER
5167	3071		DCA RECEV	
5170	1071		TAD RECEV	
5171	5763		JMP I 107I	
		/		
	5200	*5200		
		/		
		107J,	0000	/FIELD SERVICE CHANGE
	0000		6136	
	6136		SKP	/SKIP TRAP, CLBA
	7410		HLT	/SAVE OUTPUT FOR ERROR PRINTER
	7402	EHLT10,	DCA RECEV	
	3071			

STOPS.  
5165 WAS 7010





Address	Instruction	Comments
5205	TAD RECV	
5206	JMP I 10TJ	
5207	0000	/FIELD SERVICE CHANGE
5210	6137	/SKIP TRAP, CLCA
5211	SKP	/SAVE OUTPUT FOR ERROR PRINTER
5212	HLT	
5213	DCA RECV	
5214	TAD RECV	
5215	JMP I 10TK	
5216	0000	
5217	CIA SEND	
5220	SEA CLA	
5221	ISZ SNDRV	/WAS SEND AND RECEV THE SAME ?
5222	JMP I SNDRV	
5223	0000	
5224	RANDOM, 0000	
5225	TAD REGE	
5226	RAL	
5227	SEL	
5230	TAD I 10	
5231	DCA REGE	
5232	TAD REGE	
5233	JMP I RANDOM	
5234	0000	
5235	CLA CLL	/CLEAR THE AC AND LINK
5236	TAD PRETS	/SET FOR PI RETURN
5237	DCA 2	
5240	ION	/CLEAR THE AC AND LINK
5241	CLA CLL	
5242	TAD KREGC	
5243	DCA REGE	
5244	JMS I XIOTR	/READ THE COUNTER
5245	ISZ REGE	
5246	JMP I 1	
5247	ISZ REGE	
5250	JMP I 7	
5251	ISZ PIGOS	
5252	IOF	/DISABLE PROGRAM INTERRUPT
5253	JMP I PIGOS	
5254	PRETS, PIRETS	
5255	PIGOS, PIGOS	
5256	CLA CLL	/CLEAR THE AC AND LINK
5257	TAD PRET1	/SET FOR PI RETURN
5260	DCA 2	/ENABLE PROGRAM INTERRUPT
5261	ION	
5262	JMS I XISZ	
5263	SKP	
5264	ISZ PIGOS	
5265	IOF	/DISABLE PROGRAM INTERRUPT
5266	JMP I PIGOS	



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5267 5264 / PRET1, PIRET1
5270 0000 / PIG02, 0000
5271 7300 CLA CLL
5272 1301 TAD PRET2
5273 3002 DCA 2
5274 6001 ION
5275 4454 JMS I XISZ
5276 2270 ISZ PIG02
5277 6002 PIRET2, IOF
5300 5670 JMP I PIG02

5301 5277 / PRET2, PIRET2
5302 0000 SYNC,
5303 4422 JMS I XIOT0
5304 5303 JMP I=1
5305 4422 JMS I XIOT0
5306 5305 JMP I=1
5307 5702 JMP I SYNC

5310 0000 / ISZLOP, 0000
5311 7300 CLA CLL
5312 1113 TAD KTIQPS
5313 3045 DCA REGF
5314 7001 IAC
5315 7000 NOP
5316 2043 ISZ REGD
5317 5314 JMP I=3
5320 2045 ISZ REGF
5321 5314 JMP I=5
5322 5710 JMP I ISZLOP

5323 0000 / PIG03, 0000
5324 7300 CLA CLL
5325 1335 TAD PRETC
5326 3002 DCA 2
5327 6001 ION
5330 7000 NOP
5331 7410 SKP
5332 2323 ISZ PIG03
5333 6002 IOF
5334 5723 JMP I PIG03

5335 5332 RETC,
5336 0000 / PRETC, RETC
5337 7300 / PIG04, 0000
5340 1347 CLA CLL
5341 3002 TAD PRETD
5342 6001 DCA 2
5343 7000 ION
5344 2336 NOP
5345 6002 ISZ PIG04
5345 6002 RETD,
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/CLEAR THE AC AND LINK

/SET FOR PI RETURN

/WAIT

/CLEAR THE AC AND LINK

/CLEAR THE AC AND LINK



JMP I P1604

PRETD, RETD

IOTS,

0000

6132

6134

6132

6134

6132

6134

JMP I IOTS

0000

6133

6136

6133

6136

6133

6136

JMP I IOTSI

0000

6133

6137

6133

6137

6133

6137

JMP I IOTS2

0000

6134

CHA

6130

CHA

6134

CHA

6130

CHA

6134

JMP I IOTS3

0000

LAS

AND K0007

DCA CLOCKS

JMP I CLOC

ROUTINE TO TYPE OCTAL NUMBERS

ENTER WITH NUMBER IN AC AND LINK 0

OCTEL: 0000



```
5421 7006      RTL
5422 7006      RTL REG8
5423 3041      DCA K7774
5424 1130      TAD K7774
5425 3042      DCA REGC
5426 1041      TAD REG8
5427 0007      AND K0007
5430 1123      TAD K0260
5431 4507      JMS I XTYPE
5432 1041      TAD REG8
5433 7006      RTL
5434 7004      RAL
5435 3041      DCA REG8
5436 2042      ISZ REGC
5437 5226      JMP I=11
5440 5620      JMP I OCTEL

/ROUTINE FOR CRLF
CRLF, 0000      CLA CLL
5441 0000      TAD K0215
5442 7300      JMS I XTYPE
5443 1134      TAD K0212
5444 4507      JMS I XTYPE
5445 1135      JMS I XTYPE
5446 4507      JMP I CRLF
5447 5641      /ROUTINE TO TYPE CLOCK

POPR, 0000      CLA CLL
5450 0000      TAD KTADCK
5451 7300      TAD CLOCKS
5452 1262      DCA I+1
5453 1075      TAD KTADCK
5454 3255      JMS I XOCTEL
5455 1262      JMS I XPRINT
5456 4504      FMES
5457 4506      JMP I POPR
5460 6026
5461 5650

KTADCK, TAD CLKNO
CLKNO, 0001
5462 1263      0050
5463 0001      0100
5464 0050      0120
5465 0100      0500
5466 0120      5000
5467 0500
5470 5000

/ROUTINE TO SORT ERROR MESSAGES
SORT, 0000      CLA CLL
5471 0000      JMS I XCRLF
5472 7300      TAD I ERROR
5473 4501      DCA REGE
5474 1473
5475 3044
```



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5476	JMS I XMESS		/GO PRINT TEST + ADDRESS
5477	TAD I REGE		
5500	RTR		
5501	RTR		
5502	RTR		
5503	RTR		
5504	AND K0017		/MOVE IT TO BITS 8-11
5505	DCA REGE		/MASK 8-11
5506	CLA CLL		/SAVE POINTER
5507	TAD REGE		/CLEAR THE AC AND LINK
5510	TAD KTAQM		/GET POINTER
5511	DCA I+1		
5512	TAD KTAQM		
5513	DCA I+3		/MODIFIED BY TEST
5514	JMS I XCRLP		/STORE MESSAGE POINTER
5515	JMS I XPRINT		/CRLF
5516	0000		/MODIFIED MESSAGE POINTER
5517	CLA CLL		
5520	TAD REGE		/GET MESSAGE POINTER
5521	TAD K7772		/IS IT GREATER THAN
5522	SNL CLA		
5523	JMP I SORT		
5524	JMS I XREG		
5525	JMP I SORT		
5526	KTAQM, TAD KTMX		
5527	KTMX,		
5530	MES1		
5531	MES2		
5532	MES3		
5533	MES4		
5534	MES5		
5535	MES6		
5536	MES7		
5537	MES8		
5540	MES9		
5541	MES10		
5542	MES11		
5543	0000		
5544	CLA CLL		/CLEAR THE AC AND LINK
5545	JMS I XCRLP		/CRLF
5546	JMS I XPRINT		/GO PRINT TEST
5547	TMS		
5548	TAD I ERROR		/GET ERROR MESSAGE
5549	DCA REGD		/STORE MESSAGE POINTER
5550	TAD I REGD		
5551	AND K0377		/MASK 4-11
5552	JMS I XOCTEL		/GO PRINT NUMBER
5553	ISZ REGD		/UPDATE POINTER
5554	JMS I XPRINT		/GO PRINT STARTING ADDRESS
5555	AMES		
5556	TAD I REGD		
5557			



0000	0000	22-OCT-73	9155	PAGE 1-65
5560	4504	JMS I XOCTEL		/GO PRINT NUMBER
5561	7300	CLA CLL		/CLEAR THE AC AND LINK
5562	5742	JMP I MESS		
		/ROUTINE TO PRINT AC		
		/		
5593	0000	PREG: 0000		/CRLF
5594	4501	JMS I XCRLF		/GO PRINT MESSAGE
5595	4506	JMS I XPRINT		
5596	6067	GMS		
5597	1070	TAD SEND		/GET GOOD AC
5598	4504	JMS I XOCTEL		/PRINT IT
5599	4506	JMS I XPRINT		/PRINT BAD AC
5600	6077	BMS		
5601	1071	TAD RECEV		/GET BAD AC
5602	4504	JMS I XOCTEL		/PRINT IT
5603	7300	CLA CLL		/CLEAR THE AC AND LINK
5604	5763	JMP I PREG		
		/		
		/5600		
		/		
5600	0000	SET0: 0000		/GET JMP I 2
5601	1100	TAD JMP12		/SET FOR PI RETURN
5602	3001	DCA I		
5603	5600	JMP I SET0		
		/ROUTINE TO TYPE LISTING		
		/ENTER WITH JMS +1 EQUAL TO START OF LIST		
		/		
		PRINT: 0000		/CLEAR THE AC AND LINK
5604	0000	CLA CLL		
5605	7300	TAD I PRINT		/SET FOR RETURN +1
5606	1604	ISE PRINT		/SAVE THE POINTER
5607	2204	DCA REG8		/GET THE CHARACTER
5610	3041	TAD I REG8		/MASK BITS 0-5
5611	1441	AND K7700		/END OF MESSAGE
5612	0012	SNA		/YES, EXIT
5613	7450	JMP EXIT		/IS AC MINUS
5614	5240	SMA		/NO, SET THE LINK
5615	7500	CML		
5616	7020	IAC		
5617	7001	RTR		
5620	7012	RTR		
5621	7012	RTR		
5622	7012	RTR		
5623	4507	JMS I XTYPE		/PRINT THE CHARACTER
5624	1441	TAD I REG8		/GET THE WORD
5625	0133	AND K0077		/MASK BITS 6-11
5626	7450	SNA		/END OF MESSAGE
5627	5240	JMP EXIT		/YES, EXIT
5630	1125	TAD K3740		/NO, ADD A CONSTANT
5631	7500	SMA		
5632	1124	TAD K4100		
5633	1126	TAD K0240		
5634	4507	JMS I XTYPE		/TYPE THE CHARACTER
5635	2041	ISE REG8		/UPDATE WORD LIST



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5636	7300	CLA CLL		/CLEAR THE AC AND LINK
5637	5211	JMP PRINT+5		
5640	7300	CLA CLL		/CLEAR THE AC AND LINK
5641	5604	JMP I PRINT		/YES EXIT
		EXIT,		
		/ROUTINE TO WAIT FOR OVERFLOWS		
		XWAIT,		
5642	0000	DCA SAVAC		/SAVE THE AC
5643	3011	CLA CLL CHA RAL		
5644	7344	TAD XWAIT		
5645	1242	DCA XWAIT		/SET FOR RETURN ADDRESS
5646	3242	ISZ REGB		
5647	2041	JMP RETURN		
5650	5256	ISZ REGF		
5651	2045	JMP RETURN		
5652	5256	CLA CLL CHA IAC RAL		
5653	7325	TAD XWAIT		
5654	1242	DCA XWAIT		/UPDATE FOR ERROR RETURN
5655	3242	ISZ REGB		
5656	1011	JMP I XWAIT		
5657	5642	RETURN,		
		SHLAS,		
5660	0000	DCA SAVAC		/CHECK FOR EXTERNAL CLOCK SCOPE LOOP
5661	7604	AND K0010		/ENTER SCOPE LOOP
5662	0142	SEA CLA		
5663	7640	JMP CLKIN		
5664	5325	LAS		/CHECK FOR EXTERNAL PULSE SCOPE LOOP
5665	7604	AND K0020		/ENTER SCOPE LOOP
5666	0140	SEA CLA		/AC TO 7777
5667	7640	JMP EXTER		
5670	5313	CLA CLL CHA		
5671	7340	DCA KTICPS		
5672	3113	LAS		
5673	7604	AND K6007		
5674	0114	SEA CLA		
5675	7640	JMP I03		
5676	5301	TAD KPRMTI		
5677	1111	DCA KTICPS		
5700	3113	LAS		/GET HIS SWITCHES
5701	7604	RAI		/GET BIT 1
5702	7004	SPA CLA		/TEST SCHMITT
5703	7710	JMP I SWLAS		/GET HIS SWITCHES
5704	5660	ISZ SWLAS		/TEST DK8=EP
5725	2230	LAS		/TEST DK8=EA OR DK8=EC
5706	7604	SPA CLA		
5707	7710	JMP I SWLAS		
5710	5660	ISZ SWLAS		
5711	2260	JMP I SWLAS		
5712	5660	EXTER,		
5713	7340	CLA CLL CHA		/IOT 6133, CLAB
5714	4427	JMS I XIOTB		
5715	7300	CLA CLL		
5716	1137	TAD K0040		



PAL10	V142	22=0CT=73	9155	PAGE 1=67
5717	1147		TAD K0600	/GET ENABLES
5720	4425		JMS I X10TP	/IOT 6132, CLOE
5721	4424		JMS I X10TE	/IOT 6131, CLSK
5722	5321		JMP I=1	/WAIT FOR OVERFLOW
5723	6007		6007	/CAF OR CLEAR THE WORLD
5724	5313		JMP EXTER	/CONTINUE WITH SCOPE LOOP
5725	7340	/CLKIN:	CLA CLL CHA	/AC TO 7777
5726	4427		JMS I X10TG	/IOT 6133, CLAB
5727	7300		CLA CLL	
5730	1013		TAD K0100	/GET ENABLES
5731	4426		JMS I X10TP1	/IOT 6132, CLOE
5732	4424		JMS I X10TE	/IOT 6131, CLSK
5733	5332		JMP I=1	/WAIT FOR OPERATOR
5734	6007		6007	/CAF OR CLEAR THE WORLD
5735	1006		TAD K0207	
5736	4507		JMS I XTYPE	/TTY SIGNAL
5737	5325		JMP CLKIN	/LOOP
5740	0000	/PASS:	0000	
5741	4501		JMS I XCRLP	/CRLF
5742	4506		JMS I XPRINT	/PRINT MESSAGE
5743	6014		PHES	
5744	6007		6007	
5745	5740		JMP I PASS	
5746	0000	/GTAD:	0000	
5747	1095		TAD CLOCKS	/GET SELECTED CLOCK
5750	1354		TAD CLTAD	
5751	3746		DCA I GTAD	
5752	2346		ISE GTAD	
5753	5746		JMP I GTAD	
5754	5755	/CLTAD:	CLTAD +1	
5755	6000		6000	
5756	1612		1612	
5757	4776		4776	
5760	5367		5367	
5761	7306		7306	
5762	7747		7747	
5763	4000		4000	
5764	1527		1527	
5765	4552		4552	
5766	5217		5217	
5767	7276		7276	
5770	7741		7741	
5771	0000	/TIMCLK:	0000	
5772	7004		LAS	
5773	0114		AND K6007	
5774	7050		SNA CLA	
5775	1166		TAD PATCH	
5776	1012		TAD K7000	
5777	5771		JMP I TIMCLK	



DKMES, TEXT ?DK8E CLOCKS DIAGNOSTIC?

V142

6000 0413  
6001 7005  
6002 4003  
6003 1417  
6004 0313  
6005 2340  
6006 0411  
6007 0107  
6010 1617  
6011 2324  
6012 1103  
6013 0000  
6014 0413  
6015 7005  
6016 4020  
6017 0123  
6020 2340  
6021 0317  
6022 1520  
6023 1405  
6024 2405  
6025 0000  
6026 4003  
6027 2023  
6030 4003  
6031 1417  
6032 0313  
6033 4023  
6034 0514  
6035 0503  
6036 2405  
6037 0440  
6040 0231  
6041 4017  
6042 2005  
6043 2201  
6044 2417  
6045 2200  
6046 2405  
6047 2324  
6050 4000  
6051 4006  
6052 0111  
6053 1405  
6054 0454  
6055 4023  
6056 2401  
6057 2224  
6060 1116  
6061 0740  
6062 0104  
6063 0422  
6064 0523  
6065 2340  
6066 0000

PMES, TEXT ?DK8E PASS COMPLETE?

PMES, TEXT ? CPS CLOCK SELECTED BY OPERATOR?

PMES, TEXT ?TEST ?

AMES, TEXT ? FAILED, STARTING ADDRESS ?



6067 2410  
6070 0540  
6071 0717  
6072 1704  
6073 4001  
6074 0340  
6075 7540  
6076 0000  
6077 4001  
6100 1604  
6101 4002  
6102 0104  
6103 4001  
6104 0340  
6105 7540  
6106 0000  
6107 0314  
6110 1703  
6111 1340  
6112 2313  
6113 1120  
6114 4006  
6115 0111  
6116 1405  
6117 0454  
6120 4016  
6121 1740  
6122 2313  
6123 1120  
6124 4005  
6125 3020  
6126 0503  
6127 2405  
6130 0400  
6131 0314  
6132 1703  
6133 1340  
6134 2313  
6135 1120  
6136 4006  
6137 0111  
6140 1405  
6141 0454  
6142 4023  
6143 1411  
6144 2040  
6145 0530  
6146 2005  
6147 0324  
6150 0504  
6151 0000  
6152 2022  
6153 1707  
6154 2201  
6155 1540

GMES, TEXT ?THE GOOD AC # ?

BMES, TEXT ? AND BAD AC # ?

MES1, TEXT ?CLOCK SKIP FAILED, NO SKIP EXPECTED?

MES2, TEXT ?CLOCK SKIP FAILED, SKIP EXPECTED?

MES3, TEXT ?PROGRAM INTERRUPT FAILED, NO INTERRUPT EXPECTED?



6156 1116  
6157 2405  
6160 2222  
6161 2520  
6162 2440  
6163 0601  
6164 1114  
6165 0504  
6166 3440  
6167 1617  
6170 4011  
6171 1024  
6172 0522  
6173 2225  
6174 2024  
6175 4005  
6176 3020  
6177 0503  
6200 2405  
6201 0400  
6202 2022  
6203 1707  
6204 2201  
6205 1540  
6206 1116  
6207 2405  
6210 2222  
6211 2520  
6212 2440  
6213 0601  
6214 1114  
6215 0504  
6216 3440  
6217 1116  
6220 2405  
6221 2222  
6222 2520  
6223 2440  
6224 0530  
6225 2005  
6226 0324  
6227 0504  
6230 0000  
6231 0314  
6232 1705  
6233 1340  
6234 1725  
6235 2420  
6236 2324  
6237 4006  
6240 0111  
6241 1405  
6242 0454  
6243 4003  
6244 1417

MESS, TEXT ?PROGRAM INTERRUPT FAILED, INTERRUPT EXPECTED?

MESS, TEXT ?CLOCK OUTPUT FAILED, CLOCK FREQUENCY FAST?



6245 0313  
6246 4006  
6247 2205  
6250 2125  
6251 0516  
6252 0331  
6253 4006  
6254 0123  
6255 2400  
6256 0314  
6257 1703  
6260 1340  
6261 1725  
6262 2420  
6263 2524  
6264 4006  
6265 0111  
6266 1405  
6267 0454  
6270 4003  
6271 1417  
6272 0313  
6273 4006  
6274 2205  
6275 2125  
6276 0516  
6277 0331  
6300 4023  
6301 1417  
6302 2700  
6303 2410  
6304 0310  
6305 0103  
6306 4027  
6307 0123  
6310 4003  
6311 1001  
6312 1607  
6313 0504  
6314 4002  
6315 3140  
6316 0140  
6317 0314  
6320 1705  
6321 1340  
6322 1117  
6323 2400  
6324 0314  
6325 1703  
6326 1340  
6327 0225  
6330 0606  
6331 0522  
6332 4022  
6333 0507

MSG: TEXT ?CLOCK OUTPUT FAILED: CLOCK FREQUENCY SLOW?

MSG: TEXT ?THE IC WAS CHANGED BY A CLOCK 10#?

MSG: TEXT ?CLOCK BUFFER REGISTER AND AC TRANSFER FAILED?



6334 1123  
6335 2405  
6336 2240  
6337 0116  
6340 0440  
6341 0103  
6342 4024  
6343 2201  
6344 1623  
6345 0605  
6346 2240  
6347 0601  
6350 1114  
6351 0504  
6352 0000  
6353 0314  
6354 1703  
6355 1340  
6356 0317  
6357 2516  
6360 2405  
6361 2240  
6362 2205  
6363 0711  
6364 2324  
6365 0522  
6366 4001  
6367 1604  
6370 4001  
6371 0340  
6372 2422  
6373 0116  
6374 2306  
6375 0522  
6376 4006  
6377 0111  
6400 1405  
6401 0400  
6402 0314  
6403 1703  
6404 1340  
6405 0516  
6406 0102  
6407 1405  
6410 4522  
6411 0507  
6412 1123  
6413 2405  
6414 2240  
6415 0116  
6416 0440  
6417 0103  
6420 4024  
6421 2201  
6422 1623

MES9, TEXT 76LOCK COUNTER REGISTER AND AC TRANSFER FAILED?

MES10, TEXT 76LOCK ENABLE REGISTER AND AC TRANSFER FAILED?



PAL10

V142

6423 0605  
6424 2240  
6425 0601  
6426 1114  
6427 0504  
6430 0000  
6431 0314  
6432 1703  
6433 1340  
6434 2324  
6435 0124  
6436 2523  
6437 4022  
6440 0507  
6441 1123  
6442 2405  
6443 2240  
6444 0116  
6445 0440  
6446 0103  
6447 4024  
6450 2201  
6451 1023  
6452 0605  
6453 2240  
6454 0601  
6455 1114  
6456 0504  
6457 0000

2200CT=73

9195

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MES11, TEXT ?CLOCK STATUS REGISTER AND AC TRANSFER FAILED?

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CLOCK SKIP FAILED, SKIP EXPECTED  
DK8E CLOCKS DIAGNOSTIC  
0001 CPS CLOCK SELECTED BY OPERATOR

TEST 0004 FAILED, STARTING ADDRESS 0273  
CLOCK SKIP FAILED, SKIP EXPECTED  
DK8E CLOCKS DIAGNOSTIC

TEST 0050 FAILED, STARTING ADDRESS 1036  
CLOCK BUFFER REGISTER AND AC TRANSFER FAILED  
THE GOOD AC = 0120 AND BAD AC = 7520  
DK8E CLOCKS DIAGNOSTIC

TEST 0050 FAILED, STARTING ADDRESS  
DK8E CLOCKS DIAGNOSTIC  
0100 CPS CLOCK SELECTED BY OPERATOR

TEST 0004 FAILED, STARTING ADDRESS 0273  
CLOCK SKIP FAILED, SKIP EXPECTED  
DK8E CLOCKS DIAGNOSTIC  
0050 CPS CLOCK SELECTED BY OPERATOR

TEST 0004 FAILED, STARTING ADDRESS 0273  
CLOCK SKIP FAILED, SKIP EXPECTED  
DK8E CLOCKS DIAGNOSTIC

TEST 0050 FAILED, STARTING ADDRESS 1036  
CLOCK BUFFER REGISTER AND AC TRANSFER FAILED  
THE GOOD AC = 0152 AND BAD AC = 7552

shwzco.  
SR 4101



DK8E CLOCKS DIAGNOSTIC  
0050 CPS CLOCK SELECTED BY OPERATOR  
STARTING ADDRESS 0273

TEST 0004 FAILED, SKIP EXPECTED  
CLOCK SKIP FAILED, SKIP EXPECTED  
DK8E CLOCKS DIAGNOSTIC  
0050 CPS CLOCK SELECTED BY OPERATOR  
STARTING ADDRESS 0273

TEST 0004 FAILED, SKIP EXPECTED  
CLOCK SKIP FAILED, SKIP EXPECTED  
DK8E CLOCKS DIAGNOSTIC  
0100 CPS CLOCK SELECTED BY OPERATOR  
STARTING ADDRESS 0273

TEST 0004 FAILED, SKIP EXPECTED  
CLOCK SKIP FAILED, SKIP EXPECTED  
DK8E CLOCKS DIAGNOSTIC  
0050 CPS CLOCK SELECTED BY OPERATOR  
STARTING ADDRESS 0273

TEST 0004 FAILED, SKIP EXPECTED  
CLOCK SKIP FAILED, SKIP EXPECTED  
DK8E CLOCKS DIAGNOSTIC  
0500 CPS CLOCK SELECTED BY OPERATOR  
STARTING ADDRESS 0273

TEST 0004 FAILED, SKIP EXPECTED



AMES	0091	K0017	0137	LOOP	0077	SETO	5600
AUTO10	0010	K0020	0140	MES1	6107	SKPMAT	0046
BEGIN	0200	K0040	0137	MES10	6402	SNDRV	5216
BELL	0046	K0077	0133	MES11	6431	SORT	5471
BONEAC	0215	K0100	0015	MES2	6131	SWLAS	5660
BMES	0077	K0200	0006	MES3	6152	SYNC	5302
CLKIN	0725	K0207	0135	MES4	6202	T113A	1655
CLKNO	5463	K0212	0135	MES5	6231	T113B	1646
CLOCK	5413	K0215	0134	MES6	6256	T114A	1673
CLOCKS	0075	K0240	0126	MES7	6303	T114B	1664
CLRRGC	0065	K0260	0123	MES8	6324	T11A	0354
CLYAD	5754	K0300	0145	MES9	6353	T120A	1751
CLYF	5441	K0377	0136	MESS	5542	T121A	1766
CKMES	6000	K0400	0116	NERRO	5000	T122A	2014
ENLT1	5034	K0500	0146	NERROR	0072	T122B	1775
ENLT10	5203	K0600	0147	OCTEL	5420	T123A	2043
ENLT11	5212	K0700	0130	OUT	5015	T123B	2024
ENLT2	5126	K1000	0124	OVER2	0061	T124A	2072
ENLT3	5141	K2000	0143	OVER2A	0062	T124B	2053
ENLT4	5145	K2525	0016	PASS	5740	T125A	2120
ENLT5	5193	K3000	0120	PATCH	0166	T125B	2102
ENLT6	5197	K3740	0125	PIG01	5255	T126A	2147
ENLT7	5166	K4000	0014	PIG02	5270	T126B	2125
ERR0	5020	K4100	0124	PIG03	5323	T127A	2200
ERROR	0073	K5000	0121	PIG04	5336	T12A	0366
EXIT	5640	K5252	0017	PIG05	5334	T130A	2220
EXTER	5713	K6000	0117	PIRET1	5264	T133A	2306
PHES	6026	K6007	0114	PIRET2	5277	T133B	2273
SMES	6067	K7000	0141	PIRET5	5252	T147A	2555
GYAO	5746	K7400	0112	PHES	6014	T147B	2537
IN	5043	K7700	0012	POPR	5450	T150A	2603
IOYA	5102	K7770	0122	PREG	5563	T150B	2565
IOY0	5107	K7772	0132	PRET1	5267	T151A	2631
IOY0	5114	K7773	0131	PRET2	5301	T151B	2613
IOY0	5121	K7774	0130	PRET5	5254	T152A	2657
IOY0	5127	KPRMT1	0111	PRETC	5335	T152B	2641
IOYF	5134	KREGC	0076	PRETD	5347	T153A	2705
IOYF1	5142	KT1GCS	0113	PRINT	5604	T153B	2667
IOY6	5146	KT1	0151	RANDOM	5224	T154A	2733
IOYH	5154	KT1A	0152	RANDY	0055	T154B	2715
IOYI	5163	KTADCK	5462	RECEV	0071	T172A	3154
IOYJ	5200	KTADOM	5526	REGA	0040	T172A1	3257
IOYK	5207	KT8	0153	REGB	0041	T1729	3244
IOYS	5350	KT81	0154	REGC	0042	T173A	3240
IOYS1	5360	KT0	0155	REGU	0043	T173A1	3363
IOYS2	5370	KT01	0156	REGE	0044	T173B	3206
IOYS3	5400	KT02	0157	REGF	0045	T173B1	3273
ISZLOP	5310	KT0	0160	RETC	5332	T174A	3267
JMP12	0100	KT01	0161	RETD	5345	T174A1	3336
K0006	0115	KTE	0162	RETURN	5656	T174B	3341
K0007	0007	KTE1	0163	SAVAC	0011	T174B1	3326
K0010	0142	KTMX	5527	SEND	0070		3323



T175A	3371	TST110	1605	TST167	3157	TST244	4562
T175A1	3374	TST111	1616	TST17	0431	TST245	4602
T175B	3361	TST112	1631	TST170	3177	TST246	4621
T175B1	3356	TST113	1642	TST171	3215	TST247	4643
T176A	3421	TST114	1660	TST172	3283	TST25	0520
T176A1	3424	TST115	1676	TST173	3262	TST250	4663
T176B	3411	TST116	1707	TST174	3311	TST251	4706
T176B1	3405	TST117	1722	TST175	3344	TST26	0534
T177A	3491	TST118	0357	TST176	3377	TST27	0547
T177A1	3454	TST119	1735	TST177	3427	TST3	0265
T177B	3441	TST120	1754	TST2	0251	TST30	0570
T177B1	3435	TST121	1774	TST20	0441	TST31	0601
T200A	3501	TST122	2077	TST200	3457	TST32	0615
T200A1	3504	TST123	2046	TST201	3507	TST33	0626
T200B	3471	TST124	2075	TST202	3561	TST34	0637
T200B1	3465	TST125	2123	TST203	3573	TST35	0647
T201A	3551	TST126	2152	TST204	3605	TST36	0657
T201B	3522	TST127	0371	TST205	3617	TST37	0667
T202A	3632	TST128	2203	TST206	3635	TST4	0273
T202A1	3650	TST129	2223	TST207	3633	TST40	0677
T202A2	3666	TST130	2245	TST21	0432	TST41	0711
T202A3	3704	TST131	2264	TST210	3671	TST42	0722
T202A4	4003	TST132	2311	TST211	3704	TST43	0733
T202A5	4022	TST133	2331	TST212	3720	TST44	0746
T202A6	4073	TST134	2350	TST213	3734	TST45	0761
T202A7	4265	TST135	2367	TST214	3750	TST46	1000
T202A8	0775	TST136	0400	TST215	3767	TST47	1017
T202A9	0763	TST137	2407	TST216	4006	TST5	0303
T202A10	1014	TST138	2423	TST217	4025	TST50	1036
T202A11	1005	TST139	2437	TST22	4063	TST51	1055
T202A12	1033	TST140	2452	TST220	4050	TST52	1070
T202A13	1024	TST141	2466	TST221	4073	TST53	1102
T202A14	1052	TST142	2502	TST222	4116	TST54	1115
T202A15	1040	TST143	2516	TST223	4133	TST55	1130
T202A16	1332	TST144	2532	TST224	4150	TST56	1142
T202A17	1322	TST145	0407	TST225	4165	TST57	1153
T202A18	1351	TST146	2560	TST226	4204	TST6	0322
T202A19	1341	TST147	2606	TST227	4223	TST60	1164
T202A20	5771	TST148	2604	TST228	4242	TST61	1177
T202A21	6046	TST149	2662	TST229	4270	TST62	1212
T202A22	0221	TST150	2710	TST230	4242	TST63	1227
T202A23	0235	TST151	2736	TST231	4310	TST64	1244
T202A24	0337	TST152	2751	TST232	4330	TST65	1255
T202A25	1465	TST153	2766	TST233	4350	TST66	1271
T202A26	1501	TST154	0422	TST234	4372	TST67	1302
T202A27	1514	TST155	3004	TST235	4414	TST7	0330
T202A28	1530	TST156	3023	TST236	4435	TST70	1316
T202A29	1542	TST157	3041	TST237	4505	TST71	1335
T202A30	1552	TST158	3060	TST238	4456	TST72	1354
T202A31	1563	TST159	3076	TST239	4477	TST73	1367
T202A32	1574	TST160	3117	TST240	4520	TST74	1404
T202A33	0346	TST161	3137	TST241	4541	TST75	1421



TSY76 1435  
TSY77 1431  
TYPE 5056  
XBELL 0110  
XCLOCK 0074  
XCLREG 0060  
XCLRF 0101  
XCRS1 0171  
XCRS2 0172  
XCRS3 0173  
XCRS4 0174  
XCRS5 0175  
XCKQEP 0063  
XGETM 0167  
XGTAD 0067  
XIOTA 0020  
XIOTB 0021  
XIOTC 0022  
XIOTD 0023  
XIOTE 0024  
XIOTF 0025  
XIOTF1 0026  
XIOTG 0027  
XIOTH 0030  
XIOTI 0031  
XIOTJ 0032  
XIOTK 0033  
XIOTS 0034  
XIOTS1 0035  
XIOTS2 0036  
XIOTS3 0037  
XISA 0034  
XLAS 0066  
XMESS 0105  
XMIYT 0064  
XMITT1 0065  
XCTEL 0104  
XOPR 0105  
XPASS 0170  
XPIG01 0047  
XPIG02 0090  
XPIG03 0051  
XPIG04 0052  
XPIG05 0053  
XPIG17 0100  
XREG 0102  
XSET0 0164  
XSNDRV 0056  
XSORT 0103  
XSYNC 0057  
XTYPE 0107  
XWALT 5642



ERRORS DETECTED: 0

LINKS GENERATED: 0

RUN-TIME: 21 SECONDS

3K CORE USED